

NURSING HOME BED SUPPLY:
A SYNTHESIS OF THE LITERATURE AND
STATE INITIATIVES



FINAL REPORT

Prepared for:

The Health Care Financing Administration

by:

Lewin-VHI

September 1994

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY	ES-1
WHAT DETERMINES THE TYPES OF NURSING HOMES AND THE NUMBERS OF NURSING HOME BEDS IN DIFFERENT STATES?	ES-2
The Types of Nursing Homes	ES-2
Determinants of Nursing Home Bed Supply	ES-3
Implications of Nursing Home Bed Supply for Access to Care	ES-4
The Importance of Demand-Side Issues in the Study of Nursing Home Beds.....	ES-4
THE IMPACT OF STATE CERTIFICATE OF NEED (CON) PROGRAMS.....	ES-5
MEASURES TO MITIGATE A NURSING HOME ACCESS PROBLEM.....	ES-6
CHAPTER 1 INTRODUCTION	1-1
CHAPTER 2 WHAT DETERMINES THE TYPES OF NURSING HOMES AND THE NUMBER OF NURSING HOME BEDS IN DIFFERENT STATES?	2-1
A. Nursing Home Types.....	2-1
B. How Much Variation is There in the Bed Supply Across States? Has the Variation Changed Over Time?.....	2-6
C. Why Does Bed Supply Vary Across States?.....	2-12
1. Empirical Explanations -- the Demand for Nursing Home Beds	2-12
2. Other Reasons Why Nursing Home Bed Supply Varies Among States: The Supply of Nursing Home Beds	2-14
D. What is "Excess Demand" and How Can One Determine it Exists?	2-17
1. Does a High Occupancy Rate Necessarily Indicate an Excess Demand Problem?	2-20
2. Does a Low Number of Beds Per Elderly Population Ratio Indicate an Access Problem?	2-21
3. Does Excess Demand Create an Access Problem for Some or All Patients? ..	2-24
a. The Hospital Backup Literature	2-24
b. Interviews with State Officials	2-25
E. Summary.....	2-29
CHAPTER 3 THE ROLE OF CERTIFICATE OF NEED IN CONTROLLING NURSING HOME BED SUPPLY	3-1
A. Why Do States Attempt to Control Nursing Home Bed Supply?	3-3
1. Expenditure Control	3-3
2. Encourage the Use of Alternative, Non-Institutional Services	3-5
3. Demand Versus Need	3-7
4. Influence the Types of Beds Built.....	3-8
5. Assure Equalized Bed Distribution across the State	3-8

TABLE OF CONTENTS (continued)

	<u>Page</u>
6. Assure Access for Medicaid Patients	3-9
7. Protect Occupancy Rates in Nursing Homes	3-9
8. Limit Operator Expansion and Promote Quality of Care	3-10
B. How Do States' CON Policies Work?	3-10
1. Characteristics of CON Policies	3-11
2. CON Review Criteria	3-12
a. Need Determination	3-12
b. Review of Financial Feasibility	3-15
c. Review of Quality	3-15
C. How Effective are CON Policies in Controlling Nursing Home Bed Supply?	3-15
D. Summary	3-19
CHAPTER 4 MEASURES THAT STATE POLICYMAKERS HAVE ADOPTED TO MITIGATE A NURSING HOME ACCESS PROBLEM	4-1
A. Restructure the Reimbursement System	4-1
B. Create Special Units or Facilities for Difficult-to-Place Patients	4-2
C. Increase Funding for Alternative Care Services	4-2
D. Increasing the Supply of Nursing Home Beds	4-3
E. Summary	4-3
APPENDIX A SELECTED CHARACTERISTICS OF THE NURSING HOME BED SUPPLY	A-1
APPENDIX B SELECTED CHARACTERISTICS OF STATE CON PROGRAMS	B-1
APPENDIX C NUMBER OF LICENSED BEDS PER 1,000 PERSONS AGE 65 AND OVER AND 85 AND OVER: 1978 TO 1992	C-1
BIBLIOGRAPHY	B-1

EXECUTIVE SUMMARY

The costs of providing nursing home care are large and growing as both the price of nursing home care and the amount of care provided continue to increase. Almost half of all nursing home costs are borne by state Medicaid programs. Officials in various states and the Health Care Financing Administration (HCFA), the federal agency responsible for overseeing state Medicaid programs, are naturally interested in containing the costs of nursing home care while maintaining access to care for needy patients and ensuring acceptable levels of quality. To attain these goals, the states and HCFA have used their authority to influence the supply of nursing home beds.

This paper assists HCFA and state officials in answering specific questions regarding nursing home bed supply. After interviewing health officials in seven states and reviewing the literature on nursing home bed supply, Lewin-VHI has synthesized information on the following issues:

- What determines the types of nursing homes and the numbers of nursing home beds in different states? What is an "adequate" supply of nursing home beds?
- Do state Certificate of Need (CON) programs affect nursing home bed supply?
- How have state officials addressed nursing home access problems?

The focus of this analysis is on cost and access issues relating to bed supply, and not on broader considerations relating to quality. However, it is impossible to ignore quality issues when considering cost and access issues because initiatives that enhance access or control costs inevitably affect quality.

WHAT DETERMINES THE TYPES OF NURSING HOMES AND THE NUMBERS OF NURSING HOME BEDS IN DIFFERENT STATES?

The Types of Nursing Homes

The two most recent comprehensive national surveys of nursing home characteristics are the 1986 Inventory of Long Term Care Places (ILTCP) and the 1991 National Health Provider Inventory (NHPI).¹ Nursing homes can be distinguished in a number of different ways:

- By facility type -- Most facilities are either skilled nursing facilities (SNFs) or intermediate care facilities (ICFs). SNFs provide more intensive care than ICFs, and only HCFA certified SNFs are allowed to care for Medicare patients. Most facilities and beds in 1986 were SNF certified; currently, HCFA makes no distinctions between ICFs and SNFs. For this reason, the NHPI grouped SNFs and ICFs together.
- By facility size -- In 1986, most nursing homes were small (less than 100 beds), but most nursing home beds were in large nursing homes (with more than 100 beds). From 1986 to 1991, both the percent of nursing homes that are large and the percent of total beds located in large nursing homes increased.
- By facility ownership status -- In 1986, almost three quarters of all nursing homes were for-profit, over a fifth were non-profit, and less than a tenth were government owned. The distribution of ownership status did not change that much between 1986 and 1991. Government-owned facilities, however, tended to be much larger than for-profit or other non-profit homes.
- By hospital-based vs. non-hospital-based facility -- By 1986, 734 hospital-based nursing homes contained almost 61,000 beds. By 1991, the number of hospital based facilities increased to 767, but the number of beds declined to 56,000. The Prospective Payment System (PPS) has encouraged shorter hospital stays and more rapid discharges to other settings (including nursing homes) for Medicare beneficiaries.

¹ The ILTCP excludes residential care facilities but includes hospital-based nursing homes. The NHPI includes both nursing homes (free-standing and hospital-based) and board and care homes. The NHPI's non-response rate for board and care homes, however, is quite high.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

ON THE KINETICS OF THE REACTION OF

HYDROGEN PEROXIDE WITH

VARIOUS CATALYSTS

BY

1960

Determinants of Nursing Home Bed Supply

In 1986 there were more than 1.6 million nursing home beds in over 17,000 nursing homes in the U.S. By 1991 the number of beds had declined by only a few thousand, but the number of homes had fallen to less than 15,000 (excluding hospital based facilities). The number of beds per 1,000 persons age 65 and over (a measure of nursing home bed supply) in 1986 was roughly the same in the South, Northeast, and West (mean of 50 beds per 1,000 aged population) but was higher in the Midwest (mean 70 beds).

It is difficult to tell whether the relative supply of nursing home beds has increased or decreased in the past decade. Harrington et al. (1993) found that the number of licensed nursing home beds per 1,000 persons age 65 and over first decreased from 53.4 in 1978 to 52.7 in 1986, before rising to 53.3 in 1990 and then declining again to 53.1 in 1992. Cornelius (1989) determined that the number of certified beds per 1,000 Medicare eligibles age 65 and over increased slightly during the same period. It is hard to interpret these findings because:

- There are more licensed than certified beds -- licensing nursing home beds is a state function, while certifying beds is done at the federal level. All certified beds must be licensed, but not all licensed beds are certified.
- There are more elderly persons than Medicare eligibles -- some persons age 65 and over are not covered by Medicare.

Whether the supply of beds has increased or decreased in the past decade, it is quite clear that the supply of beds varies substantially across states. Several studies have attempted to explain these differences. These studies find that, in general, there are more nursing home beds in states with higher Medicaid reimbursement rates, higher rates of pay for nursing home employees, colder climates, higher per capita incomes, and higher rates of unemployment (Harrington, 1988). In addition, the financial attractiveness of nursing homes as an investment option helps explain differences in the supply of beds across states (Baldwin and Bishop, 1984).

Implications of Nursing Home Bed Supply for Access to Care

Most of the attention paid to the supply of nursing home beds has been directed at the concern that supply has a direct effect on access to care. A low supply of nursing home beds (or high rates of nursing home occupancy), however, is not *prima facie* evidence of access problems. First, long term care patients are often treated outside of nursing homes, and states (such as Oregon) with low nursing home bed supply often have extensive home and community long term care programs. Second, many access problems tend to be concentrated in particular areas of the state, so that the local, rather than statewide, supply of beds is the best indication of access problems. Third, reimbursement policies can produce incentives for nursing homes to admit private pay (rather than Medicaid) patients, resulting in access problems. Finally, many access problems are concentrated at particular "choke points" in the long term care system (such as the transition from the hospital to the nursing home); these problems may be more affected by reimbursement policies than by the supply of nursing home beds.

The Importance of Demand-Side Issues in the Study of Nursing Home Beds

The emphasis on the supply of nursing home beds in the empirical literature often gives short shift to important demand-side issues which contribute to nursing home access problems. Indeed, if consumers did not demand nursing home care, there would be no "access" problem. Demand-side factors become even more relevant in light of the fact that consumers themselves often do not pay the full costs of their nursing home care. Instead, publicly funded programs pay for a considerable portion of nursing home costs. Publicly subsidized users of nursing home services (i.e., Medicaid recipients and their families) may be less sensitive to price, and therefore will demand more care than they otherwise would if they were paying for the care themselves.² These potential demand-side access problems may be exacerbated by state regulations which control Medicaid reimbursement rates.

² At the same time, estimates of induced demand should be tempered by the fact that many residents enter a nursing home as private pay patients and then convert to Medicaid after depleting private funds.

THE IMPACT OF STATE CERTIFICATE OF NEED (CON) PROGRAMS

State governments are increasingly faced with the problem of containing large increases in their Medicaid expenditures. Because long term care is such a large component of Medicaid spending, states are paying more attention to curtailing nursing home expenses. A primary policy instrument used by states to contain nursing home costs is Certificate of Need (CON) programs.

CON programs review the need for large medical capital investments within the state. In 1991, 38 states and the District of Columbia had a CON program; twelve states had recently repealed their CON laws; and five states planned to let their CON programs lapse, or "sunset." Of the twelve states that repealed their CON laws, eight have instituted construction moratoria. All CON programs have rules specifying the minimum size of projects that require a CON. These "trigger" points range from \$0 to \$4 million. Some states designate a single individual to make CON decisions, while others assign the task to boards, councils, or commissions. While CON decisions take about four months to make in most states, the waiting period in some states can take as long as six to eighteen months.

In deciding to approve or deny a CON for new nursing home beds, states apply different criteria to determine the "need" for the new beds. The approaches taken by state planners are broadly divided into demand-based approaches (which project bed needs on the basis of the number of beds in current use) and needs-based approaches (which establish a target beds to elderly population ratio). In practice, however, states do not always consistently apply their own bed need criteria when deciding whether to approve or deny a CON request.

In the case of nursing homes, CON has been used by states to limit the expansion of current nursing home facilities as well as limit the entry of new facilities. By limiting the construction of new beds, CON limits the number of beds available for Medicaid patients. Coupled with the ability of states to control Medicaid nursing home reimbursement levels, CON

Presumably, these Medicaid spenddown patients (and their families) would be price sensitive, at least with respect to the cost of care at admission.

programs may have reduced Medicaid expenditures on long term care in states with CON programs.

States use CON policy to try to achieve other goals such as influencing the type of new beds constructed, assuring access for Medicaid patients, maintaining high levels of nursing home occupancy, and promoting quality of care. States also try to encourage the development of non-institutional long term care services by limiting investments in new nursing home beds. Few states, however, have set aside funds to encourage alternative treatment methods. Admittedly, the logical connection between limiting the bed supply, on the one hand, and improving quality or access to care, on the other, is often difficult to discern.

MEASURES TO MITIGATE A NURSING HOME ACCESS PROBLEM

Whether a state's long term care system has an "adequate" supply of nursing home beds thus depends on a variety of interacting factors. Patient demand, availability of community-based alternatives to institutional care, reimbursement policies, and the willingness or ability of facilities to treat heavy care patients are all factors that states must consider when evaluating whether their current bed supply is "adequate" to meet the long term care needs of their population.

Because there are many causes of nursing home "access" problems, it is important for state policymakers to first identify the magnitude of any problems and their causes. State policymakers then have several strategies they can use to mitigate any access problems.

Common strategies adopted by states include:

- Restructuring the Medicaid reimbursement system, either through rate adjustments, case-mix or resource-based payments, or adjustments to capital reimbursement;
- Creating special units or facilities for difficult-to-place patients;
- Increasing funding for alternative care settings, coupled with a nursing home preadmission screening program; and
- Increasing the supply of beds.

It is important for states to assess the goals and objectives of their long term care systems and to learn from the experiences of other states. The policies of one state should not always be adopted "as is" by other states given the unique aspects and interactions of state policies. For example, the impact of capital reimbursement on nursing home investment varies by state depending upon characteristics of the nursing home care market (Manard et al., 1991). Changes in capital reimbursement that would have large impacts on investment in one state may have little effect in another. Operating payment rates, private patient demand, state and local regulatory environments, and geographical financial markets may all affect the impact of capital reimbursement changes. State planners need a good understanding of the local environment before proceeding with changes to their state's long-term care system.

CHAPTER 1

INTRODUCTION

Policymakers face a difficult set of choices in designing a system which provides nursing home care to Medicaid and Medicare patients. They must contain the large and rising costs of this care while insuring access to care for needy patients.³ In 1990, national spending on nursing home care was \$53.1 billion, a 10.4 percent increase from the previous year (U.S. Office of the Actuary, 1991; Lazenby and Letsch, 1990). Medicaid expenditures accounted for 45 percent of the total spending on nursing home care, Medicare for 5 percent, private spending for 48 percent, and other public expenditures (e.g., the Veterans Administration) for 2 percent.⁴ Despite these large and growing expenditures, numerous articles and anecdotal evidence suggest that elderly persons experience access problems to nursing home care (Dubay, et al., 1990; U.S. GAO, 1990).

Policymakers have at least four broad ways to achieve the often competing goals of cost containment and access to care: (1) by determining eligibility (both financial and medical) for public benefits; (2) by establishing a system of reimbursement for nursing home care; (3) by striving to match patients with particular needs with necessary services, perhaps through a formal system of case management; and (4) by influencing the supply of nursing home beds. These four methods for influencing cost and access are quite interrelated and often can be used in combination. For example, not only should reimbursement systems compensate providers adequately for services and reward them for improving the functional status of patients, the systems should also encourage providers to discharge patients to less intensive

³ Quality of care is an equally important issue. It is beyond the scope of this analysis, however, to analyze the quality issue in any depth. Instead, we focus here on issues of access and cost containment in the context of nursing home bed supply.

⁴ Private spending consists of \$23.9 billion in out-of-pocket costs and \$1.6 billion in private health insurance and other private spending.

treatment facilities or the community, when appropriate, thereby satisfying patient needs in the most economical way.⁵

It is beyond the scope of this paper to describe eligibility for long term care services, the design of nursing home reimbursement systems, or the use of case management on long term care. Instead, this analysis concentrates on the fourth method of balancing cost containment and access, namely, policymakers' ability to influence the supply of nursing home beds. In the next chapter, we first examine the characteristics and determinants of nursing home bed supply and discuss why it is difficult to determine when access problems exist. We discuss why bed supply variations and high occupancy rates may not directly indicate access problems, and we discuss the literature on the reasons why bed supply varies across states. Chapter 3 analyzes Certificate of Need (CON) programs, the most direct policy instrument states have to control their nursing home bed supply. Chapter 4 briefly discusses methods that state policymakers have used to respond to access problems and explains why states should not use generic solutions to try and solve their long-term care problems.

The information analyzed in this paper was obtained through a review of the literature and through interviews with state officials in seven states (California, New York, Ohio, Oregon, Tennessee, Texas, and Wisconsin). Given the focus of the paper, our main objective was to choose a mix of states with and without CON regulations, as well as states which were letting their CON programs lapse ("sunset") in 1991. For example, Texas no longer has a CON program, CON has been suspended in California, and the CON programs in Ohio and Tennessee were scheduled to "sunset" in 1991. New York and Oregon, however, continued to have CON programs. We also sought to choose states with varying rates of nursing home use. Wisconsin, Texas, and Ohio have fairly high ratios of beds per elderly persons; Oregon

⁵ For example, suppose a nursing home reimbursement system pays nursing home operators more for caring for heavy care patients. If one home successfully improves the functional status of its heavy care patients while another does not, the first home could suffer financially. Perversely, by improving a patient's functional status, the first home may start receiving lower per diem reimbursement rates than the second home, who will continue to receive the higher, heavy care per diem reimbursement rate for its heavy care patients.

and California have lower ratios; and Tennessee and New York fall in between. Our final criteria for choosing states was extreme occupancy rates (both low and high). Therefore, we chose Texas and Oregon for their low statewide average occupancy rates and New York for its very high statewide occupancy rate.

CHAPTER 2

WHAT DETERMINES THE TYPES OF NURSING HOMES AND THE NUMBER OF NURSING HOME BEDS IN DIFFERENT STATES?

This chapter first presents information on the types of nursing homes using data from the 1986 Inventory of Long Term Care Places (ILTCP). Next, it discusses the extent of variation in nursing home bed supply across geographic region and whether or not this variation has changed over time. The paper then discusses why variations exist across states. Finally, it presents methods used to determine if excess demand exists in nursing home markets.

A. Nursing Home Types

The three most comprehensive national surveys that report nursing home characteristics are the 1985 National Nursing Home Survey (NNHS), the 1986 Inventory of Long Term Care Places (ILTCP), and the 1991 National Health Provider Inventory (NHPI). The NHPI survey updated the findings of the ILTCP. Unfortunately, data from the 1985 NNHS cannot be compared directly to the 1986 ILTCP and the 1991 NHPI because the NNHS excluded residential facilities from its sampling frame (Sirrocco, 1988 and Sirrocco, 1994).

Table One summarizes the characteristics of nursing homes based on the 1986 ILTCP. These data indicate that:

- There was no "typical" nursing home in 1986. While most nursing homes were small (under 100 beds), approximately 70 percent of nursing home beds were in large (over 100 beds) facilities. Nursing homes tended to be smaller in the Western region of the country but more numerous in the Southern and Midwestern regions.
- While almost three fourths of all facilities were privately owned, for-profit facilities were considerably smaller in size than non-profit and especially government-owned facilities.
- Nursing homes can be divided into three groups: (1) skilled nursing facilities (SNFs); (2) intermediate care facilities (ICFs); and (3) uncertified homes. Just over one half of all homes were SNFs in 1986, while almost a third were ICFs.

Table One

Distribution of Nursing Home Facilities and Beds by Selected Characteristics: U.S., 1986

	Facilities		Beds		Average Bed Size*
	Number	Percent	Number	Percent	
Total Homes	17,122	100.0%	1,568,375	100.0%	92
Number of Beds in Facility					
Less than 25 Beds	2,515	14.7	27,138	1.7	11
25 to 99 Beds	7,909	46.2	490,224	31.3	63
100 to 199 Beds	5,539	32.5	729,336	46.5	131
200 or More Beds	1,139	6.6	321,677	20.5	277
Facility Ownership Status					
Profit	12,399	72.4	1,083,752	69.1	87
Non Profit	3,700	21.6	360,475	23.0	101
Government	1,023	6.0	124,148	7.9	126
Census Region					
North East	3,089	18.0	335,095	21.4	108
North Central (Midwest)	5,647	33.0	525,689	33.5	94
South	5,172	30.2	477,768	30.5	93
West	3,214	18.8	229,823	14.6	72
Type of Nursing Home					
Skilled Nursing Facility	8,639	50.4	1,037,173	66.1	122
Intermediate Care Facility	5,473	32.0	416,073	26.6	77
Uncertified Nursing Home	3,010	17.6	114,499	7.3	38

* The average bed size column excludes hospital-based facilities.

SOURCE: Data from the 1986 Inventory of Long Term Care Places, National Center for Health Statistics.

Table One-A

Distribution of Nursing Home Facilities and Beds by Selected Characteristics: U.S., 1991

	Facilities		Beds		Average Bed Size*
	Number	Percent	Number	Percent	
Total Homes	14,744	100.0%	1,559,394	100.0%	106
Number of Beds in Facility					
Less than 25 Beds	563	3.8	8,101	0.5	14
25 to 99 Beds	7,041	47.8	456,704	29.3	65
100 to 199 Beds	6,028	40.9	92,348	50.8	131
200 or More Beds	1,112	7.5	302,241	19.4	272
Facility Ownership Status					
Profit	10,522	71.4	1,086,907	69.7	103
Non Profit	3,497	23.7	172,272	23.9	106
Government	725	4.9	100,215	6.4	138
Census Region					
North East	2,654	18.0	312,864	21.1	124
North Central (Midwest)	5,137	34.8	468,636	33.3	101
South	4,708	31.9	457,944	32.3	17
West	2,245	15.2	186,876	13.4	93

* The average bed size column excludes hospital-based facilities.

SOURCE: Data from the 1991 National Health Provider Inventory, National Center for Health Statistics.

Table One-A updates the findings from 1986 using the 1991 NHPI. The total number of nursing homes fell sharply (from over 17,000 to under 15,000) and the number of beds declined by a few thousand from 1986 to 1991. Consequently, the average size of nursing homes increased from 92 to 106 beds per facility. The distribution of both institutions and beds, otherwise, was relatively unchanged from 1986 to 1991.

Previous evidence suggests that hospital-based nursing homes are the fastest growing segment of the nursing home industry (Manard, et al, 1988). Data from the ILTCP show that there were 734 hospital-based facilities and almost 61,000 beds in 1986 (see Table Two). By 1991, however, the number of hospital-based facilities increased by 33 while the number of beds fell by almost 5,000 (Table Two-A). Consequently, the average size of hospital-based facilities fell from 83 beds in 1986 to 73 in 1991.

Table Two

**Distribution of Hospital-Based Nursing Home Facilities and Beds in the U.S.
by Selected Characteristics, 1986**

	Facilities		Beds		Average Bed Size
	Number	Percent	Number	Percent	
Total Home	734	100.0%	60,983	100.0%	53
Facility Ownership Status					
Profit	63	8.6	4,800	7.9	76
Non Profit	437	59.5	31,747	52.0	73
Government	234	31.8	24,436	40.1	104
Census Region					
Northeast	141	19.2	17,590	28.8	125
North Central (Midwest)	254	34.6	18,975	31.1	95
South	164	22.3	13,763	22.6	84
West	175	23.8	10,655	17.5	61
Type of Nursing Home					
Skilled Nursing Facility	594	80.9	53,060	87.1	95
Intermediate Care Facility	98	13.3	5,235	8.6	53
Uncertified Nursing Home	42	5.7	2,688	4.4	64

Source: Data from the 1986 Inventory of Long Term Care Places, National Center for Health Statistics.

Table Two shows that most hospital-based facilities in 1986 tended to be non-profit; this reflects the non-profit ownership status of many hospitals. Slightly over one third of hospital-based facilities were located in the Midwest. An overwhelming majority of facilities and beds (81 percent and 87 percent, respectively) were certified skilled nursing facilities and beds. It is not surprising that a majority of facilities and beds are SNFs because of incentives under PPS to discharge patients requiring heavy skilled care into these facilities. The distribution of hospital based facilities did not change much between 1986 and 1991 (table Two-A).

Table Two-A

**Distribution of Hospital-Based Nursing Home Facilities and Beds in the U.S.
by Selected Characteristics, 1991**

	Facilities		Beds		Average Bed Size
	Number	Percent	Number	Percent	
Total Home	767	100.0%	56,292	100.0%	73
Facility Ownership Status					
Profit	63	8.2	5,344	9.5	85
Non Profit	432	56.3	27,563	49.0	64
Government	272	35.5	23,385	41.5	86
Census Region					
Northeast	138	18.0	16,698	29.1	119
North Central (Midwest)	279	36.4	17,406	30.9	62
South	172	22.4	12,104	21.5	70
West	178	23.2	10,384	18.4	58

Source: Data from the 1991 National Health Provider Inventory, National Center for Health Statistics.

The number of nursing home beds per person aged 65 and over was highest in the Midwest (68.5 beds per 1,000 elderly) and roughly the national average in the other geographic regions (see Table Three). In 1986, most nursing home beds in the Northeast and the West were in SNF- facilities while the Midwest and the South had a large proportion of beds in ICFs. Only 4 beds per 1,000 elderly were uncertified in the U.S.

Table Three

**Ratio of Nursing Home Beds per 1,000 Persons Age 65 and Over* by
Certification and Census Region: 1986**

	Ratio of Beds to 1,000 Persons Age 65 and Over			
	Total	Skilled Nursing Facility	Intermediate Care Facility	Uncertified Nursing Homes
United States	51.7	33.7	14.1	3.8
Census Region				
North East	47.4	38.9	5.9	2.6
North Central (Midwest)	68.5	41.5	21.8	5.2
South	46.9	24.1	19.3	3.4
West	42.3	34.3	3.8	4.2

* Excludes Hospital Based Facilities.

SOURCE: 1986 Inventory of Long Term Care Places, National Center for Health Statistics.

B. How Much Variation is There in the Bed Supply Across States? Has the Variation Changed Over Time?

There is substantial variation in the nursing home bed supply across states, leading some researchers to conclude that the elderly in some states experience access problems to nursing home care (Harrington et al. 1993; Grant, 1988; Friedland, 1990). The conventional method for examining variation in the bed supply is to compare the number of beds per elderly (usually defined as 65 years of age and older) across states. Harrington et al. (1993) found that the ratio of nursing home beds per 1,000 elderly persons ranged from 24.4 to 85.9 across states in 1992 (Table Four). Examination of the ratio of beds to elderly persons indicates regional patterns (Southern states having a low number of beds per elderly population and North Central (Midwest) states having a high number) as well as differences among states within regions. Harrington et al. also found that the total number of beds per 1,000 elderly persons remained virtually unchanged from 1978 (53.4) to 1992 (53.1).

The only other data on characteristics of the nursing home bed supply over time were compiled by Elizabeth Cornelius at HCFA, who obtained data on beds certified for Medicare and Medicaid from the Medicare/Medicaid Automated Certification System (MMACS) for the years 1981, 1985, and 1989. These data include certified beds only, and thus differ from data collected by the Institute for Health and Aging on licensed beds (see Table Five). Licensing beds is a state function, while certifying beds is a federal function overseen by the Health Care Financing Administration (HCFA). For a nursing home bed to be certified, it must also be licensed. As a result, there are more licensed than certified beds. The MMACS measures of nursing home bed supply also use the number of nursing home beds per 1,000 Medicare enrollees, not per 1,000 elderly in each state.

Cornelius found different trends than Harrington et al. (see Tables Four and Five). Cornelius found that the average (54 to 55) and median (51 to 56) number of beds in the U.S. increased from 1981 to 1989, while the range across states decreased from 84.7 in 1981 to 80.0 in 1989 (Cornelius also found that the range in state bed supply was greater than that found by Harrington et al., particularly in 1989).

Table Four

Ratio of Licensed Nursing Home Beds per 1,000 Persons Age 65 and Over

State	Year				
	1978	1982	1986	1990	1992
Alaska	92.3	62.9	53.2	45.0	44.3
Alabama	47.3	46.4	40.8	43.2	42.8
Arkansas	61.8	62.1	65.6	64.3	66.5
Arizona	19.2	20.6	33.5	33.4	32.6
California	48.2	44.2	40.6	40.3	40.3
Colorado	84.7	69.2	61.7	60.6	57.6
Connecticut	69.3	67.7	65.9	60.6	65.9
District of Columbia	25.8	26.7	37.2	39.6	40.6
Delaware	49.3	55.5	54.3	55.2	57.3
Florida	22.3	22.8	24.9	27.3	28.6
Georgia	62.7	63.6	57.9	56.8	58.5
Hawaii	34.0	30.6	28.3	27.3	25.7
Iowa	79.9	80.5	80.5	76.7	81.7
Idaho	50.6	46.4	44.2	45.7	45.7
Illinois	71.2	63.6	67.6	68.1	68.7
Indiana	73.3	82.5	79.4	83.9	82.2
Kansas	86.7	83.4	82.3	88.6	79.0
Kentucky	40.8	43.7	46.1	48.0	48.5
Louisiana	58.1	83.9	75.8	79.5	78.0
Massachusetts	61.8	57.1	58.1	52.0	63.3
Maryland	51.3	52.7	20.8	52.0	51.2
Maine	63.9	61.0	63.1	60.6	60.9
Michigan	52.5	48.0	47.3	46.4	44.3
Minnesota	86.0	85.5	46.1	81.9	80.2
Missouri	56.5	67.0	70.6	77.2	84.4
Mississippi	40.8	46.4	46.1	47.8	49.2
Montana	77.4	67.9	66.0	60.2	58.5
North Carolina	30.8	33.9	32.5	34.3	41.6

Table Four (Continued)

Ratio of Licensed Nursing Home Beds per 1,000 Persons Age 65 and Over

State	Year				
	1978	1982	1986	1990	1992
North Dakota	76.4	78.8	77.5	76.4	76.2
Nebraska	50.5	67.9	85.8	67.9	85.9
New Hampshire	60.7	61.0	57.4	54.4	53.2
New Jersey	35.6	38.1	41.1	46.0	41.9
New Mexico	27.2	32.5	39.9	39.7	39.2
Nevada	34.6	29.6	25.8	27.2	24.4
New York	42.5	32.8	43.3	44.2	44.7
Ohio	57.6	60.6	63.9	64.2	62.9
Oklahoma	72.0	71.6	74.9	78.2	79.5
Oregon	50.9	47.2	49.0	39.3	36.0
Pennsylvania	45.2	47.9	38.8	38.0	47.8
Rhode Island	66.9	66.8	68.6	66.5	66.8
South Carolina	36.7	40.2	35.2	36.4	38.7
South Dakota	63.9	82.0	80.0	80.1	79.5
Tennessee	37.9	48.5	51.2	56.5	55.4
Texas	74.9	70.6	68.6	68.6	67.9
Utah	55.9	45.6	46.7	54.4	50.2
Virginia	34.0	40.0	67.9	42.2	42.1
Vermont	50.9	49.4	53.4	55.1	53.6
Washington	63.2	53.3	50.9	50.5	49.7
Wisconsin	92.7	89.0	86.4	76.4	74.5
West Virginia	23.7	29.1	34.4	37.9	37.2
Wyoming	50.5	53.3	50.5	63.2	71.1
North Central	70.0	70.6	70.5	70.4	69.9
North East	47.4	48.0	49.0	30.1	49.7
South	45.9	47.2	47.4	48.8	49.6
West	50.6	45.5	42.7	42.3	41.4
U.S. Average	53.4	53.1	52.7	53.3	53.1

SOURCE: Harrington et al. (1993).

Table Five

Ratio Of Nursing Home Beds to 1,000 Persons Age 65 and Over, 1978 to 1992

	Licensed Beds					Medicare and Medicaid Certified Beds			
	1978	1982	1986	1990	1992	1981	1985	1989	
Average Ratio	53	53	53	53	53	54	54	55	
Median Ratio	56	56	53	55	54	51	54	56	
Lowest Ratio	19 (Arizona)	21 (Arizona)	25 (Florida)	24 (Nevada)	24 (Nevada)	10 (Arizona)	16 (Arizona)	26 (Nevada)	
Highest Ratio	93 (Wisconsin)	89 (Wisconsin)	86 (Wisconsin)	88 (Kansas)	85 (Kansas)	95 (Minnesota)	96 (Minnesota)	89 (Minnesota)	

SOURCE: Data on Licensed beds are from Harrington et al. (1993); data on certified beds are from MMACS, 1990.

Therefore, the HCFA data paint a slightly different picture than the Institute for Health and Aging data. While both findings indicate that there have been no dramatic changes in bed supply patterns over the past decade or so, the Institute for Health and Aging data show the number of licensed beds per 1,000 elderly persons to be more or less constant, while the HCFA data show a slight increase in the number of certified beds per 1,000 Medicare enrollees. In the context of access to nursing home care for Medicare and Medicaid recipients, the most relevant figure is the supply of "certified" beds since only certified facilities are entitled to receive Medicare or Medicaid reimbursement. Licensed but uncertified facilities may care for only private paying patients.

It is not clear that the number of persons age 65 and over or the Medicare eligible population serves as the best "denominator" in measures of nursing home bed supply. Bureau of Census tabulations of the 1980 and 1990 Censuses indicated that 86.4 percent of the nursing home population in 1980 and 89.8 percent of the nursing home population in 1990 were age 65 and over. During this 10 year period, however, the fraction of the nursing home population age 65 to 84 declined from 52.2 percent to 48.1 percent, while the fraction of the nursing home population age 85 and over increased from 34.2 percent to 41.7 percent.⁶ Harrington et al. (1993) report that the number of nursing home beds per 1,000 persons age 85 and over declined from 610.3 in 1978 to 501.7 in 1992. If persons age 85 and older continue to constitute a growing fraction of the nursing home population, the ratio of beds to the 85 and over population may be a better measure of nursing home bed supply in the future.

⁶ The source of the data from 1980 is *1980 Census of the Population, "Persons in Institutions and Other Group Quarter," PC80-2-4D*, and for 1990 is *U.S. Bureau of the Census, 1990 Census of Population, prepared from the Census Analysis System*. In the 1990 Decennial census, "nursing homes" include skilled nursing facilities, intermediate care facilities, long term care rooms in wards or buildings on the grounds of hospitals, or long term care rooms/nursing wings in congregate housing facilities. Also included are nursing, convalescent, and rest homes, such as soldiers', sailors', veterans', and fraternal or religious homes for the aged, with or without nursing care.

C. Why Does Bed Supply Vary Across States?

Researchers have advanced a number of theories explaining why the number of nursing home beds per 1,000 elderly persons varies across different states. Not all of these theories are easily tested, which limits the use of sophisticated multivariate statistical analyses. In general, the empirical, multivariate studies explain differences in the number of nursing home beds per 1,000 elderly persons in different states by comparing the demand for nursing home services in each state. Empirical studies, however, have had less success in identifying and explaining supply side factors.

Before moving on, we should explain the distinction between "the supply of nursing home beds" and "the nursing home bed supply." Most empirical papers use the term "the nursing home bed supply" to refer to some measure of the number of nursing home beds, such as the total number of beds or the number of beds per 1,000 elderly persons in a state or other area. "The nursing home bed supply" then is a census of nursing home beds. We use this term in the same way. On the other hand, "the supply of nursing home beds" is used to indicate how many beds are offered to the market by nursing home operators. "The supply of nursing home beds" is used when discussing the incentives which encourage or discourage current or potential nursing home operators to supply beds to the market.

1. Empirical Explanations -- the Demand for Nursing Home Beds

Harrington et al. (1988) used regression analysis to determine the factors that were associated with the nursing home bed supply in different states, and the direction of that association. They found that the following factors were significant in explaining interstate variation in the bed supply:

- Cost of providing care (nursing pay per employee) -- negative
- Hospital bed supply per population -- positive
- Climate (average annual temperature) -- negative
- Personal income per capita -- positive
- Percent unemployed -- negative

The authors also tried to determine if the availability of alternative care services, measured by the number of Medicare home health care visits per capita, affected the bed supply. They found that this variable was not significant. Given the limited size of and/or lack of variation in the Medicare home health care benefit asserted by the authors, it is not surprising that a relationship was not found.⁷ A better measure would probably have been to include Medicaid home care and personal care visits as well.

The authors then used time series regressions to determine the factors that explain the changes in bed supply over time. They found that the regression coefficient for the number of home health care visits became significantly more negative from 1979 to 1984, indicating a substitution of home health care for nursing home care. Changes in the bed supply were positively related to the Medicaid per diem reimbursement rate; however, Medicaid eligibility policies and the existence of waiver programs did not seem to affect changes in the bed supply over time.

Nyman (1989) estimated two measures of nursing home bed supply for 70 counties in Wisconsin in 1983. These were: (1) beds per 1,000 elderly in the county; and (2) the total number of beds in the county. The following factors were significantly associated with beds per thousand elderly:

- per capita income (significant at the 10 percent level) -- positive;
- the average Medicaid SNF rate (5 percent level) -- positive;
- the percent of elderly over the age of 85 (1 percent level) -- positive; and
- the percent of elderly who were women (10 percent level) -- negative.

The significant factors related to the number of beds in the county were:

- the average Medicaid SNF rate (5 percent level) -- positive;

⁷ Recent analyses of the Medicare home health benefit (see Schore, 1994) show significant variation in utilization and number of visits by census division. In addition, Medicare home health expenditures have grown significantly in the last five years.

- the number of elderly (1 percent level) -- positive; and
- the percent of elderly over 85 (1 percent level) -- positive.

2. **Other Reasons Why Nursing Home Bed Supply Varies Among States: the Supply of Nursing Home Beds**

a. **Government Regulations**

The supply of nursing home beds offered to the market by nursing home operators depends on a variety of factors. Unlike a normal competitive market, where producers (here, nursing home operators) are free to supply any quantity of their product at a price where the overall demand for the product equals the total supply of the product, the market for nursing home care is strongly influenced by government regulation. In addition to setting the prices for nursing home care provided to Medicaid or Medicare patients, government regulations also directly limit the supply of nursing home care. The next chapter of this synthesis describes in detail the Certificate of Need (CON) programs used by the states to control nursing home bed supply; a discussion of how states and the federal government determine payment levels (e.g., reimbursement systems) for nursing home care provided to Medicaid and Medicare patients is beyond the scope of this paper. Nevertheless, the differences in the stringency of CON and related regulations and their enforcement across states helps explain the inter-state differences in nursing home bed supply.

b. **Nursing Homes as an Investment Choice**

Even in a market characterized by extensive government regulation, producers (e.g., nursing home operators) still must be fairly sure that they earn a reasonable amount of profit on the products they produce.⁸ Potential and current nursing home operators must carefully

⁸ This reasonable amount of profit may differ for not-for-profit and for-profit nursing homes. Not-for-profit homes may only wish to provide the most care possible without going bankrupt. On the other hand, cost containment pressures may induce both for-profit and not-for-profit operators to institute some of the same policies as a matter of economic viability. In addition, the line between for-profit and not-for-profit facilities may not be that distinct. For example, operators of not-for-profit homes might pay themselves high salaries that are accounted for as "administrative expenses."

assess the financial risks associated with operating nursing homes and predict the rate of return they can expect to earn on their investments. If nursing homes are not an attractive investment alternative, the supply of nursing home beds could decrease.

Bed supply and entrance into the nursing home market are tightly controlled in many states, thus reducing the level of competition faced by existing nursing home operators. Nursing homes compete with one another for lucrative private pay patients; however, there is sufficient demand for nursing home services relative to bed supply that many nursing homes are able to maintain full occupancy. In other types of real estate ventures, such as housing construction, office leasing, or retail property, much of the financial risk for investors lies in the possibility of having unused space and consequently insufficient revenue to cover debt service requirements. The tightly regulated environment in most states greatly reduces the risk that nursing homes will face occupancy problems.

Another aspect of a system dominated by government payments is that the risk of non-payment for services is greatly reduced. Providers are generally assured of Medicaid payment for approved services; however, facilities must accept the rate determined by the state. Therefore, although the risk of non-payment is reduced in comparison to other types of investments (e.g., apartment rentals), the perceived reasonableness of state payment rates is an important determinant of the nursing home investment decision.

Financial risk is also affected by the relative illiquidity of nursing home investment. Investors require a higher return from assets which cannot easily be transferred. For example, the low liquidity of New York nursing homes is illustrated by the annual turnover rate of nursing home real estate property of less than one percent (Lewin-VHI, 1990a).⁹ Nursing homes provide specialized services to a specific population and are usually not easily convertible into non-nursing home uses. Proposed sales must usually be approved through a

⁹ On the other hand, if nursing homes are an excellent investment and are expected to increase further in value, their current owners could be reluctant to sell. If this is true, however, nursing home sales prices should be increasing now, which does not appear to be the case.

state's CON process, which could take several years. Even if attractive alternative uses exist, closing a nursing home usually requires a state approved plan of closure for transferring existing patients to other locations which may be difficult when bed supplies are tight.

Even though nursing home investment may seem less risky than other real estate investments, it may be difficult for investors to obtain financing from lenders. For example, in New York, short term loans with balloon payments and variable rate mortgages are reportedly unacceptable to the state for new construction; instead, the state requires that facilities use long term fixed rate financing (Lewin-VHI, 1990a). Because such loans recently have not been easily available from commercial banks, sponsors have been referred to other sources of funds such as the Department of Housing and Urban Development (HUD). These FHA-insured mortgages are attractive to the state because of the predictability of long term costs. The cost of this source of financing is higher, however, because of the extra fees associated with the mortgages and because HUD procedures for securing these types of loans can cause delays that ultimately increase the cost of the project.

Finally, the attractiveness of nursing homes as an investment depends crucially on the potential investor's income and wealth (Bishop and Baldwin, 1984). A nursing home is a large capital asset against which its owner can claim deductions for depreciation under certain circumstances. The value of these tax deductions in turn depends on the tax bracket of the owner; owners in higher tax brackets will reduce their total tax liabilities more than owners in lower brackets given the same deduction for depreciation. In addition to depreciation, other business expenses (such as interest payments on loans used to acquire the facility) can also be deducted, which further increases the attractiveness of owning a nursing home to individuals with high incomes. Recent changes in the tax code, however, have lessened the

attractiveness of nursing homes as an investment option to individuals and corporations in high tax brackets.¹⁰

D. What is "Excess Demand" and How Can One Determine it Exists?

Excess demand for nursing home care occurs when the demand for care by potential patients exceeds the supply of care at a given price. For most goods in excess demand, demanders of the good will bid up (or suppliers will mark up) the price of the good until supply equals demand -- i.e., the market for the good "clears." The market for nursing home care, however, may not clear for two reasons. First, many of the demanders of services receive care that is partially or fully paid for by the government (Medicare and Medicaid patients). These individuals always face a price that is below the market clearing price, and will demand more services. Some analysts call this "induced demand." Second, government regulation sets the price for the nursing home care provided to Medicaid and Medicare patients; price is not allowed to vary (in this case increase) to clear the market.

Some researchers consider the presence of excess demand in nursing home markets to be an indication of access problems. Empirical studies have used data from states and other geographic locations to test for the presence of excess demand in nursing home markets. Two studies, one by Scanlon (1980) and the other by Nyman (1989), show that excess demand exists in nursing home markets.

Scanlon (1980) presented an economic model of nursing home supply in the United States. In this model, nursing homes are either profit maximizing firms or non-profit homes which desire to maximize the level of care they provide without losing money. Patients are of two types, higher paying private patients, and lower paying public (e.g., Medicaid beneficiary) patients. Nursing homes will serve private pay patients first; private pay patients are more profitable for profit maximizing firms than public patients, and the extra revenues from these

¹⁰ The Tax Reform Act of 1986 reduced the attractiveness of nursing homes (and similarly tax-advantaged investments) to individuals and corporations in higher brackets by lowering marginal tax rates, and -- most importantly -- changing the rules regarding passive investments.

private pay patients allow non-profit nursing homes to treat more public pay patients and still cover their operating costs. The final economic agent in this model is the state, which pays for part or all of the care of public pay patients. While the state wants to purchase care for at least some public patients, the state also desires to limit its total nursing home care expenditures.¹¹ Two ways the state contains its nursing home costs are to pay a lower rate for public patients and to constrain the supply of nursing home beds through regulation.

One implication of Scanlon's theory is that private pay patients will always be treated -- they have no excess demand. The only group with excess demand are public patients; if the state allows the number of nursing beds to increase, the number of public patients and total (public plus private) patients will increase. A final conclusion of Scanlon's theory is that Medicaid reimbursement policies will have no effect on bed supply as long as reimbursements remain below "market" prices; private pay patients will continue to be served first, and public patients will still line up to fill the remaining supply of nursing home beds.¹²

Scanlon (1980) tested for the presence of excess demand by Medicaid patients in two ways. If Medicaid patients have an excess demand for beds, increasing the supply of nursing home beds (proxied by the number of unfilled beds) should increase the use of nursing home beds by Medicaid patients but not private patients.¹³ Scanlon regressed total nursing home

¹¹ At least one state, Minnesota, chose simultaneously to contain Medicaid expenditures and address the Medicaid access problem by effectively equalizing rates for Medicaid and private pay patients. This reimbursement scheme is meant to remove the incentive to admit private pay patients in favor of Medicaid patients.

¹² Admittedly, Medicaid policies could affect nursing home supply if reimbursement rates became so low that nursing homes are driven from the market through failing to cover their costs. To some extent, Medicaid rates are prevented from becoming too low by the "Boren Amendment." The Boren Amendment, among other things, requires states to pay nursing homes rates that meet the costs of "efficiently and economically operated facilities." Groups of nursing home operators in several states have been successful in forcing states to raise reimbursement levels by bringing Boren Amendment challenges in court.

¹³ The supply of nursing home beds could increase so much that the price paid by private patients could fall, which could then increase the private demand for nursing home beds, and the private nursing home use rate.

use (nursing home residents divided by the size of the 65 and over population) and private nursing home use (private pay residents divided by the size of the 65 and over population) on the number of unfilled beds in the state, along with other control variables. He found that a 10 percent increase in unfilled beds significantly increased total use by 2 percent, but did not affect private use. Thus, only non-private users (primarily Medicaid patients) had an excess demand for care.

A second way Scanlon tested for the presence of excess demand by Medicaid patients was to regress total use on the size of the Medicaid eligible population (65 and over Medicaid eligibles divided by the 65 and over population in the state). Scanlon's theory predicts that private patients are served first by nursing homes, and then any remaining beds are filled by Medicaid patients.¹⁴ Expanding the size of the Medicaid eligible population should not increase total use; a larger eligible population simply means that more prospective nursing home residents are chasing the same number of beds. Scanlon found that the size of the Medicaid eligible population did not increase total nursing home use, which again indicated the presence of excess demand for nursing home beds by Medicaid patients.

Nyman (1989) investigated the supply of and demand for nursing home beds using 1983 county level data from Wisconsin. In that year, Wisconsin had a very high ratio of nursing home beds to elderly population, suggesting that it is a state less likely to have an excess demand for nursing home beds. Nyman hypothesized that if there were excess demand for nursing home beds, the relationship between the supply of nursing home beds and the number of nursing home beds should be one for one. In a regression equation predicting the use of nursing home beds, the coefficient on the supply of beds and, their

¹⁴ Some states have enacted Medicaid "anti-discrimination" laws which require nursing homes to admit patients on a first-come, first-served basis regardless of payor status. While the effectiveness of these laws in securing access to nursing homes for Medicaid patients is largely untested, some states have engaged in vigorous enforcement as a supplement to reforms in reimbursement and other regulatory access enhancing strategies.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF THE HISTORY OF ARTS

ARTS AND SCIENCES CAMPUS

5408 S. UNIVERSITY AVE.

CHICAGO, ILL. 60637

TEL: 773-936-3000

FAX: 773-936-3000

WWW.CHICAGO.EDU

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

CHICAGO, ILL. 60637

squared statistic should both be one percent, and no other variables in the regression should be significant.

Nyman's empirical results were quite close to these predictions. The coefficient on the bed supply variable was 0.966, quite close to one, the r squared statistic was 0.987, and only one other variable, the average Medicaid SNF rate, was mildly (10 percent level), negatively significant.

To test Scanlon's contention that only Medicaid patients experience excess demand, Nyman estimated separate equations for private pay and Medicaid patient use. He determined that the coefficient on bed supply was 0.867 for Medicaid patients and 0.099 for private pay patients (both coefficients were statically significant). Perfect evidence for Scanlon's theory would have been a coefficient of one for Medicaid patients (each additional bed is filled by a Medicaid patient) and zero for private pay patients (no private pay patients are waiting for a bed).

1. Does a High Occupancy Rate Necessarily Indicate an Excess Demand Problem?

Empirical analysis performed by Scanlon (1980) and Nyman (1989) suggest that high occupancy rates provide direct evidence of excess demand. In addition, Dubay et al. (1990) report that "high occupancy rates, combined with the wide variation in nursing home utilization, do suggest the presence of inequities in nursing home access" (p. 12). There are two problems with this conclusion, however.

First, what is meant by "high" occupancy rates? According to data from the National Center for Health Statistics (1989), the average occupancy rate in nursing homes was 91.8 and the median occupancy rate was 92.6 in 1986. Therefore, one-half of all states had occupancy rates above almost 93 percent. Should we consider these states to have high occupancy rates? Based on interviews that Lewin-VHI performed for this synthesis, it was clear that the overall occupancy rate for the state is not a good indicator of an excess demand problem. Rather, it is more important to examine the variation in occupancy rates within states

to determine if there is an excess demand problem. While there is not substantial variation in occupancy rates across states, there is substantial variation within states. For example, Texas has the lowest occupancy rate in the country (83 percent in 1989); however, state officials told us that there were access problems in areas of the state where the occupancy rate is high. Among Texas' 254 counties, occupancy rates range from 27.3 percent in Somervell County to 99.8 in Goliad County.

Furthermore, an excess demand or access problem could exist in states with below-average occupancy rates if nursing home operators would rather leave beds empty than admit certain patients. According to the General Accounting Office (1990), this practice occurred in Ohio, which has had an occupancy rate of 90 percent and below throughout the 1980s.

Second, there is no agreement over what is considered an optimal or economically efficient occupancy rate. As part of estimating nursing home cost functions, researchers have used multivariate regression methods to determine the economically efficient occupancy rate. To test for the effects of occupancy on nursing home costs, some measure of occupancy (usually the number of patient days the home provides in a year divided by 365 times the number of beds in the home) is included as an explanatory variable in the regression cost equation. The occupancy rate for which average costs per patient day are lowest is interpreted as the economically efficient rate. The empirical results are mixed. Meiners (1982) found the efficient occupancy rate to be 97.7 for average total costs and 100 for average variable costs. Lee and Birnbaum (1979) found that average variable costs decrease until a 90 percent occupancy is reached, increase from 90 to 95 percent, and level off until 100 percent. Finally, Bishop (1979) found decreasing average variable costs from 0 to 90 percent occupancy rates, and some increases in costs from 95 to 100 percent occupancy rates.

2. Does a Low Number of Beds Per Elderly Population Ratio Indicate an Access Problem?

Researchers disagree if a low number of beds per elderly population indicates an access problem to nursing homes. Swan and Harrington (1986) and Rohrer (1987) used the

same data, but different methodological approaches, to determine if states had an undersupply of nursing home beds (defined as an estimate of the state population requiring personal care compared to the number of nursing home beds).¹⁵ Both studies found consistent results for 36 out of the 49 states (they found a shortage of beds in 14 states and an adequate supply in 22 states). States that were found to have an undersupply included Arizona, California, Florida, New York, and West Virginia.¹⁶ States that had an undersupply in the Rohrer study but an adequate supply in the Harrington and Swan study included Oregon, Maryland, Tennessee, and Pennsylvania.

Harrington, DuNah, and Swan (1993) updated the 1986 study to measure the adequacy of nursing home bed supply from 1978 to 1990 using a panel regression model. The number of states with an adequate supply ranged between a low of 11 (1987 and 1988) to a high of 16 (1982 and 1983). Fourteen states had an undersupply of beds in 1990 using their methodology. Several states -- Florida, Kentucky, Mississippi, New York, North Carolina, South Carolina, and West Virginia, were determined to have an inadequate bed supply in all 13 years from 1978 to 1990.¹⁷

¹⁵ Swan and Harrington (1986) and Harrington et al. (1993) used multivariate analysis to examine the determinants of nursing home demand. Regressors included the percent of aged population, personal income, and hospital beds per capita. States for which the number of nursing home beds was significantly overpredicted by the regression analysis were considered to have a shortage of beds. Rohrer (1987), alternatively, applied the proportion of persons requiring personal care by age, sex, and race (reported by Weissert (1985)) to the number of people in each state and in each age-sex-race subcategory to estimate the number of persons needing personal care.

¹⁶ The other nine states with an undersupply of nursing home beds according to these studies are: Michigan, Nevada, New Jersey, New Mexico, North Carolina, Utah, Vermont, Virginia, and Wyoming.

¹⁷ To compare the ratio of beds per 1,000 elderly across states in order to determine if particular states have an adequate supply of nursing homes, one must assume homogeneity in the 65 and older populations across states. This may be a strong assumption to make if the health of retired persons plays a part in retiree migration patterns. If good health increases a retired person's propensity to relocate to "retirement" states, then the general health status of the elderly population in "retirement" status would be different than the general health status of the elderly population in "nonretirement" states. One possible way to control for this selection bias problem would be to include the ratio of net retirement immigrants to total population as an explanatory variable for each state.

The findings from these studies are of limited use because these studies do not examine the long term care system as a whole. Neither approach takes into account the availability of home and community-based services, including board and care homes. Therefore, they find that states such as Florida and Oregon, that have extensive alternative care services and a low ratio of nursing home beds per elderly, have an undersupply of nursing home beds. Oregon, in particular, has a very low occupancy rate (87 percent), suggesting that an undersupply of beds may not be a problem in that state.

Unfortunately, it is difficult to obtain comprehensive data on the extent of alternative care services in each state. For example, Friedland (1990) reports the number of home health agencies (certified and non-certified) in each state in 1987 along with the elderly population. However, a ratio of the number of agencies to the elderly population is meaningless because each agency's capacity to serve clients is unknown.

We were able to obtain information from state officials in Oregon on the number of Medicaid clients served in alternative care settings. As of April 1991, Oregon officials reported the following:

- In-home care: 4,900 clients
- Project Independence: 3,200 clients
- Adult foster care: 3,000 clients

In addition, in 1990 fewer than 20 clients in Oregon were served in specialized living centers (for persons with AIDS and Alzheimer's disease); approximately 1,100 clients were served in residential care facilities; 40 clients were served in assisted living facilities; and an unknown number were served in satellite apartments. According to state officials, 53 percent of Medicaid clients in Oregon are served in the community while the remaining 47 percent are served in nursing homes. The availability of alternatives allows states to serve clients of varying dependency levels in different settings. For example, without adult foster care services

in Oregon, the state believes that clients might have to be cared for in nursing homes resulting in inappropriate placements.

3. Does Excess Demand Create an Access Problem for Some or All Patients?

The current empirical literature indicates that excess demand for nursing home care leads to access problems primarily for Medicaid patients. Furthermore, other studies have shown that "heavy care" Medicaid patients are particularly likely to face access problems (Dubay et al, 1990; U.S. GAO, 1990). State Medicaid programs are thus clearly faced with a problem of allocating scarce (at least to Medicaid patients) nursing home beds to patients whose need for this care is the greatest. In a market that does not clear, pre-admission screening programs are used to facilitate an efficient allocation of resources. These programs seek to determine which patients are most in need of nursing home services, and where possible, can have their needs met by other community-based programs (Curtis, Harrington, and DuNah, 1993).

Many nursing home patients were in hospitals immediately prior to entering a nursing home. At times, the hospital stay of some patients is extended as they wait for a nursing home bed to become available. These "administratively necessary days" are particularly costly to the Medicaid and Medicare programs as a day spent in a hospital is considerably more expensive than one spent in a nursing home. In addition, the risks of secondary infections and other medical complications are higher in hospitals than in nursing homes because in hospitals patients are more likely to be exposed to other patients with contagious diseases.

a. The Hospital Backup Literature

Nursing homes are often reluctant to admit patients from hospitals -- particularly Medicaid patients. Recently hospitalized nursing home patients often continue to suffer from post-acute medical conditions that require intensive (and expensive) nursing home care (Weissert et. al., 1983). While some state Medicaid programs reimburse nursing homes at

higher rates for caring for these heavy care patients, many nursing home operators continue to favor providing care to less impaired, private pay patients.

Another problem faced by potential nursing home patients and hospital discharge planners are delays in becoming eligible for Medicaid benefits. One study (Weissert and Cready, 1988) in North Carolina indicates that many of the patients waiting in hospitals for a nursing home bed to become available are also waiting for the state to declare them eligible for Medicaid benefits.¹⁸

Determining the extent of the hospital backup problem is difficult. Many studies are based on a single day's census of hospital patients who are awaiting nursing home placement. Samples of this type tend to overestimate the average length of time patients must wait for a bed. This happens because patients who have been waiting for a long time are more likely to still be in the hospital; those with shorter stays tend to already be placed and are thus less likely to be part of the sample. Gruenberg and Willemain (1982) used a sample of Massachusetts patients in 1976 who were surveyed twice; the second interview came six weeks after the first. In addition to finding that the length of the wait in the hospital depended on the supply of nursing home beds and the medical conditions of the prospective patients, the authors also discovered that average waiting periods were much shorter than single day census samples would indicate.

b. Interviews with State Officials

As part of this study, we conducted unstructured phone interviews with officials in seven states (California, New York, Ohio, Oregon, Tennessee, Texas, and Wisconsin). These officials included those most responsible for regulating nursing homes, operating the state's Medicaid nursing home program, and forecasting future nursing home needs in the state.

¹⁸ Significantly, this research found that the primary reason for delay in nursing home placement was not an insufficient supply of beds or the reluctance of nursing homes to accept "heavy care" patients because of inadequate reimbursement rates. Instead, the primary source of delay was administrative, i.e., the state's failure to certify Medicaid eligibility expeditiously. This research reinforces the notion that states should define the source of their "access" problem before implementing policy solutions.

These officials typically were employed at state health care planning agencies and state Medicaid program offices.

As we were unable to interview officials at all fifty states (and the District of Columbia) for this project, we selected the seven states we interviewed with care. We were interested in choosing states that:

- did and did not have CON programs -- Texas no longer has a CON program, the California program was suspended, and the programs in Ohio and Tennessee were scheduled to sunset in 1991. New York, Oregon, and Wisconsin continued to have CON programs;
- had different nursing home occupancy rates -- Texas and Oregon both have low occupancy rates, while New York's is quite high; and
- had different nursing home beds supplies -- Wisconsin, Texas, and Ohio had high nursing home bed to 1,000 elderly population ratios, New York and Tennessee were somewhere in the middle, and Oregon and California had lower ratios.

The state officials with whom we talked indicated that it is extremely rare for access problems to exist for private-pay patients. There was concern, however, among five of the seven states that some Medicaid patients have access problems, particularly "heavy care" patients. In addition, several of the states indicated that there were severe access problems for ventilator-dependent, Alzheimer's, and head injury patients, as well as patients with behavioral problems (see Table Six).

Table Six

Information from State Officials Regarding Access to Nursing Home Care

State	Comments
Tennessee	Concern that some Medicaid patients are not able to enter a nursing home within a 30 minute travel time from their home or family.
Oregon	Do not believe there is an access problem.
California	Chronic bed need in San Francisco and greater Bay area; access problems for Medi-Cal patients, especially "heavy care."
New York	Chronic bed need in New York City and Long Island; access problems for Medicaid, ventilator, and head injury patients and patients with behavioral problems.
Wisconsin	No access problems for Medicaid patients; may be access problems for Medicare patients.
Texas	In high occupancy areas, access problems for some Medicaid patients; "heavy care," ventilator, and Alzheimer's patients sometimes difficult to place.
Ohio	Access problems exist for "heavy care" Medicaid patients.

SOURCE: Interviews with state officials.

Officials from two states, Oregon and Wisconsin, indicated that access problems did not exist for Medicaid patients; however, officials from Wisconsin believed that Medicare patients experienced access problems. Officials from Texas, where occupancy rates are low and there appears to be an oversupply of beds, indicated that some Medicaid patients had difficulty entering a nursing home. To obtain a more complete explanation for these claims, we spoke with hospital discharge planners in both urban and rural areas of Oregon, Wisconsin, and Texas.

Oregon

Hospital discharge planners in the Portland and Salem areas believe that the majority of elderly do not have problems with access to nursing home care. In the Portland area, ventilator-dependent and AIDS patients, however, do experience access problems. In the Salem area, access to SNF and ICF care is becoming more of a problem, especially for patients who require ventilator care, rehabilitation care, and patients with high risk behaviors.

When asked why discharge planners thought that these access problems existed, the main reason they cited was that nursing home reimbursement for heavy skilled patients was not adequate to care for these types of patients.

In addition, Oregon recently became a 209(b) state in July 1991;¹⁹ if a person has more than \$1,020 in monthly income he or she is not eligible for Medicaid, even if the monthly cost of a nursing home stay exceeds \$1,020. The discharge planners we spoke with believed that this change has created additional access problems for elderly patients.

Texas

In urban areas (Dallas and Austin) where occupancy rates are relatively high, discharge planners indicated that there was a slight problem placing Medicaid patients who had multiple skill needs due to low payment rates. Medicare patients, on the other hand, were easy to place.

In rural areas (Lubbock and Yoakum), access problems are believed to be rare. In cases where high-tech equipment is required (e.g., intravenous medications, tube feeding) it is sometimes difficult to place these patients; however, extended waiting periods are unusual. Discharge planners mentioned two recent changes that they believed improved access to nursing homes. The first is the implementation of a case-mix system for Medicaid reimbursement; the second is a change in regulation that allows retroactive payment by Medicaid to the first day of admission to the nursing home for patients applying for Medicaid eligibility prior to entering a nursing home.

Wisconsin

Discharge planners in the Madison and Milwaukee areas agreed with state officials and indicated that access problems are uncommon for Medicaid patients. They informed us, however, that "heavy care," ventilator-dependent, and head injury patients, as well as patients

¹⁹ Generally, states are required to provide Medicaid benefits to Supplemental Security Income (SSI) recipients. States that used more restrictive standards for Medicaid eligibility before the enactment of 1972 SSI legislation could continue to do so under Section 209(b).

with behavioral problems and those needing infectious disease control are very difficult to place in nursing homes due to inadequate payment rates.

One of two rural areas in the state which surveyed reported having some access problems. In La Crosse, access problems were rare because of the availability of Medicare swing beds for patients requiring rehabilitation, intravenous medications, tube feeding and other skilled services. A special ventilator unit is also available at a local hospital, making it easy to place ventilator-dependent patients. In the St. Croix Falls area, beds are in short supply for Medicare patients because only one home is Medicare certified. Patients requiring skilled care often are forced to travel long distances to obtain nursing home care. Short stay Medicare placements are not difficult due to the presence of swing beds.

E. Summary

It is difficult to determine whether the relative supply of nursing home beds has increased or decreased in the past decade. Two studies using different data sets came to opposite conclusions; one indicated that bed supply has increased slightly in the past decade while the other indicated that it declined slightly. Most of this difference is due to how beds are defined; should a nursing home bed be counted if it is certified or uncertified, in a skilled nursing or intermediate care facility, etc.

Whether the supply of beds has increased or decreased in the past decade, it is quite clear that the supply of beds varies substantially among states. Several studies have attempted to explain these differences. In general, there are more nursing home beds in states with higher Medicaid reimbursement rates, higher rates of pay for nursing home employees, colder climates, higher per capita incomes, and higher rates of employment.

Most of the attention paid to the supply of nursing home beds is due to the supposed effect that supply has on access to care. A low supply of nursing home beds (or high rates of nursing home occupancy), however, are not *prima facie* evidence of access problems. First, long term care patients are often treated outside of nursing homes, and states (such as Oregon) with a low nursing home bed supply often have extensive home and community long

term care programs. Second, many access problems tend to be concentrated in particular areas of the state, so that the local, rather than statewide, supply of beds is the best indication of potential access problems. Finally, many access problems are concentrated at particular "choke points" in the long term care system (such as the transition from the hospital to the nursing home), and are more affected by state reimbursement policies than by the supply of nursing home beds.

The emphasis on the supply of nursing home beds often ignores important demand side issues. The market for nursing home care for Medicaid (and Medicare) patients is not competitive, nor does this market "clear." Markets clear only when sellers and buyers face the true costs of supplying and consuming goods and services and are free to supply and to demand all goods and services. The nursing home market does not clear because regulations limit the supply of nursing home beds, regulations may limit the ability of nursing homes to raise prices, and many nursing home patients (particularly Medicaid beneficiaries) do not pay the full costs of nursing home services. By facing below market prices, Medicaid patients are encouraged to demand more nursing home services than they would otherwise -- the "excess demand" found by Scanlon (1980) and Nyman (1989).

Ideally, markets should clear. When they do not, resources are misallocated. In the nursing home example, without regulation the nursing home bed supply would probably increase, given the excess demand of Medicaid patients.²⁰ States can reduce the misallocation of resources in this market by limiting the number of beds, but resources will still be wasted. For example, allowing operators to increase nursing home bed supply could

²⁰ It is unlikely that all Medicaid patients demanding nursing home care would find a nursing home bed if nursing bed supply was unregulated. Suppliers would supply new nursing home beds only up to the point where the cost of supplying the last nursing home bed is equal to the Medicaid reimbursement level in each state.

reduce costs to private patients, thus improving the allocation of resources. In addition, regulating the supply of nursing home beds fails to eliminate the time and resources Medicaid patients and their families waste waiting in line for a bed to become available.

CHAPTER 3

THE ROLE OF CERTIFICATE OF NEED IN CONTROLLING NURSING HOME BED SUPPLY

States began to adopt certificate of need (CON) policies after federal law in Section 1122 of the 1972 amendments of the Social Security Act stipulated that states must review all capital expenditures that exceeded \$100,000, changed a facility's bed capacity, or involved a "substantial change" in the services provided by health facilities (Feder and Scanlon, 1980). A refusal to abide by this law would jeopardize a state's capital reimbursement under Medicare, Medicaid, and the Maternal and Child Health Program. In 1974, the National Health Planning and Resources Development Act required all states to enact CON laws that met specified conditions as a requirement for receipt of funds under Public Health Service programs. By 1980, almost all states had adopted CON laws.

In 1987, Congress officially repealed the 1974 legislation; by this time seven states had already repealed their CON laws. By 1991, 38 states and the District of Columbia still had CON programs, twelve states had repealed their CON laws, and five states were due to sunset their CON programs.²¹ Of those states that repealed their CON laws, eight states have instituted construction moratoria in their place. Table Seven lists the 13 states without CON programs.

This chapter discusses three main questions. First, why do states attempt to control nursing home bed supply? Next, how do state CON policies work? Finally, how effective are CON policies in controlling the bed supply?

²¹ States that were due to sunset their CON programs are Indiana, Montana, Ohio, Tennessee, and West Virginia. Tennessee's legislature voted to extend the CON sunset one year until July 1, 1992.

Table Seven

States Without Certificate of Need (CON) Programs

State	Abolition or Sunset Date	Moratoria or Other Controls	Comments
Colorado	6/87	Yes	Department of Social Services implemented moratorium regulations for the construction of new nursing home beds.
Louisiana*	10/87	Yes	Department of Health and Hospitals' Facility Need Review Program reviews the need for new nursing home beds for Medicaid purposes using a bed-to-population and occupancy formula.
Minnesota	6/84	Yes	Continued moratorium on new nursing home bed certification.
South Dakota	9/85	Yes	Moratorium on construction of all new nursing home beds.
Utah	12/84	Yes	Implemented moratorium on certification of new nursing home beds January, 1989.
Wisconsin	1/84	Yes	Resource Allocation Program in place for long term care program; capped number of nursing home beds in place as of 1983.
Wyoming	5/87	Yes	Passed health care facility licensure statute effective January, 1990 limiting new nursing home bed construction based on occupancy rates within geographic areas.
Arizona	7/82 3/85	No	
Idaho	7/83	No	
Kansas	7/85	No	
New Mexico	6/83	No	
Texas	9/85	No	Ended moratorium on construction of new nursing home beds December, 1989.
California	1/87	No	Did not abolished but indefinitely suspended CON program, which could be reactivated.

* Louisiana never had a CON program, but instead used controls under Section 1122 of the Social Security Act until the date shown in Table Seven.

SOURCE: Tennessee Health Facilities Commission survey of other states, July, 1989, and interviews with public health and Medicaid personnel in other states by Tennessee Division of State Audit, February and March, 1990.

A. Why Do States Attempt to Control Nursing Home Bed Supply?

There are many reasons why states attempt to control nursing home bed supply. Chief among these reasons is the ability to control Medicaid expenditures; however, there are many other reasons as discussed below.

1. Expenditure Control

Moderating increases in Medicaid spending has become one of the primary goals of state governments faced with growing budget deficits and rapidly increasing health care costs. Nursing home expenditures in the 1970s and early 1980s grew by more than 8 percent a year. Costs in the long term care sector have also been increasing because of the sustained growth in the number of elderly persons.

States hope that by limiting the number of nursing home beds, CON will contain Medicaid expenses. Higher paying private pay patients will fill up the smaller supply of nursing home beds first, leaving fewer remaining beds for Medicaid patients. As states also control the price they pay for care provided to Medicaid patients, fewer Medicaid beds translates into lower nursing home costs. Empirical evidence (Feder and Scanlon, 1980; Lave, 1985) suggests that CON programs are successful in containing the supply of beds. Lewin-VHI's interviews with officials in seven states indicate that controlling Medicaid expenditures by controlling the supply of beds is a primary goal of CON policy.

While Lave's (1985) survey article mentions CON as one of many ways states are attempting to control nursing home Medicaid expenditures, Feder and Scanlon (1980) focus directly on CON. The authors interviewed officials in eight states in 1978 (California, Colorado, Georgia, Massachusetts, New Jersey, New York, Tennessee, and Washington) concerning their states' CON program. Feder and Scanlon discovered that officials in most of these states consciously and successfully used CON to strictly limit the supply of nursing home beds in their states, and that the nursing home bed supplies in most of these states were in fact reduced.

Other cost-containment alternatives are less attractive. For example, states face certain limits in lowering Medicaid reimbursement levels. First, if states set these levels too low

nursing home operators can sue for higher rates in a Boren Amendment challenge.²² Second, current nursing home operators are more receptive to CON legislation which limits new nursing home entry and competition than they are to lower rates of reimbursement (Lave, 1985; Feder and Scanlon, 1980). Under CON, current nursing home operators are provided with a monopoly on the supply of nursing home beds within the state. This market power allows operators to charge private pay patients higher rates than would be charged if entry into the nursing home market was unrestricted.

CON's ability to control public (Medicaid) expenditures on nursing home care is directly linked to the states' power to reimburse nursing homes for Medicaid patients at a rate lower than that paid by comparable private pay patients. Suppose, instead, that the rates paid by private pay patients and Medicaid were the same and the state introduces a new CON program. Over time, the number of nursing home beds will be lower under CON than the level that would have existed without the program; quantity is restricted. With the restrictions on the supply of nursing home care, the price of care will now rise. Remember, however, that the price of nursing home care faced by Medicaid patients is fixed, so their demand for nursing home care will remain the same with or without CON.²³ If the demands of these Medicaid patients are met and the state continues to pay a price equal to the private pay rate for care, the price paid by the state will rise above the pre-CON price²⁴ while the quantity of care

²² The Boren Amendment (named after Senator Boren) in the 1980 Omnibus Budget Reconciliation Act (OBRA) requires that Medicaid reimbursement levels be set at least at a level where the costs of "economically and efficiently" operated homes are covered. States have faced a number of successful Boren Amendment challenges in the courts where the state was forced to increase nursing home reimbursement rates.

²³ For the single elderly, most Medicaid programs require that patients first consume almost all of their financial assets and continue to spend almost all of their income on nursing home care. For married couples, the surviving spouse in the community is allowed to retain some of the couple's assets and income, with the remainder being devoted to nursing home care.

²⁴ Suppose the available supply of nursing home care with CON is Q_C , while the quantity of care demanded by Medicaid patients is Q_M . Private pay patients will now consume $Q_P = Q_C - Q_M$, and the new price for care is determined by the indirect demand function (e.g., price is a function of quantity) of private payers, or $P_P = f(Q_P)$.

purchased by the state remains the same. In this world, CON actually causes state nursing home expenditures to increase.

States, however, do not pay the same price for nursing home care that is faced by private pay patients.²⁵ The actual market for nursing home care is more closely approximated by Scanlon's (1980) model where private pay patients pay higher rates for care and are served first, and Medicaid patients queue up to fill the remaining nursing home beds. With CON, the number of beds left for Medicaid patients will usually decline (which may introduce access problems). States attempt to cope with Medicaid access problems in a variety of ways, including: (1) mandating that nursing homes accept Medicaid and private pay patients on a first come, first served basis; (2) requiring homes to accept some minimum number or percentage of Medicaid patients; and (3) attempting to treat Medicaid patients with home and community care instead of nursing home visits.

2. Encourage the Use of Alternative, Non-Institutional Services

By limiting the number of nursing home beds, states are, in effect, rationing institutional care. Some patients may then be directed to non-institutional settings such as home health care, board and care, or other residential care settings. A consideration of states pursuing this goal is, of course, to determine if adequate alternative care settings exist and are available to the patients not able to obtain access to institutional care.

During interviews with state officials in seven states, three of the states (Ohio, Oregon, and New York) reported developing alternative settings as a specific goal of their CON policy. The comprehensiveness of the states' alternative care services varies, however. For example, Ohio has had a moratorium on the number of nursing home beds certified for Medicaid since 1987, yet development of community-based alternatives has been limited (Lewin-VHI, 1991). Oregon, in contrast, serves the majority of its Medicaid patients in the community, according to state officials. Oregon's network of community care includes Oregon Project Independence,

²⁵ As noted above, however, Minnesota's nursing home reimbursement system equalizes rates for Medicaid and private pay patients at the state established Medicaid rate.

home care, foster care, specialized living for special populations, assisted living, satellite apartments, and residential care facilities. New York is similar to Oregon in that it has a number of community based alternatives accessible to Medicaid patients such as Enriched Housing, residential facilities, home care, and supportive housing. Feder and Scanlon (1980), in interviews with eight states in the late 1970s, found that although several states planned to use CON to encourage the development of alternative care settings few states appeared willing to set aside the funds required to make these services available.

Extensive use of alternative care services can raise new concerns. For example, during our interviews with hospital discharge planners in Oregon we learned that there is concern over the quality of care in adult foster care settings (the most popular alternative care service used in that state). The discharge planners noted that compared to nursing homes, adult foster care settings have minimal supervision of care provided, no regular inspections, and no assigned caseworkers. Site visits are performed only when social services caseworkers receive a formal complaint on behalf of a foster care resident. In addition, as skilled nursing home placements are difficult to find, hospitals are discharging increasingly ill patients to foster care, whose staffs may lack the technical training and resources to adequately care for these patients.

It is also uncertain whether community-based alternatives to nursing home care are cost effective. Indeed, several studies have demonstrated that home care can be as costly as nursing home care for certain patients; that home care may be a complement, not a substitute, for nursing home care; and that only short term nursing home stays are averted by home care, leaving unaffected longer term, more costly nursing home stays (See generally, Weissert, 1985; Weissert, Cready and Pawelak, 1988). Home and community-based long term care programs may also cause a "woodwork" affect, where patients who previously did not seek nursing home care now emerge from the woodwork to participate in these new programs. Thus, the extent to which states can contain costs, increase access, and assure quality using

community based alternatives to nursing home care depends on a range of factors which need further exploration in the literature.

3. Demand Versus Need

As Feder and Scanlon (1980) assert, objective need for nursing home care based on functional or medical status may have little to do with the number of persons actually seeking nursing home care. Individual demand for nursing home care often depends on such factors as personal or familial preferences or financial resources. States perceive that providers can induce demand in consumers who (1) are not able to evaluate accurately their need for health care services such as skilled nursing care, and (2) are not concerned with the costs of these services (Feder and Scanlon, 1980).²⁶ Willemain (1977) also asserts that some persons who do not need nursing home care will nonetheless seek such care if it is available.

To overcome this conflict between demand and need in the health care market, states limit the supply of beds which, in turn, limits the amount of demand providers can induce.²⁷ Officials in some states believe that one way of avoiding induced demand is to implement a certificate of need program to keep the bed supply at a level required by persons who need such long term care. Without a nursing home prescreening program, however, it cannot be guaranteed that those who do not "need" nursing home care will not receive it. In addition, as Lave asserts, "...there has been no research on whether this decreased growth in nursing home beds has reduced the amount of inappropriate bed care provided or has made it more difficult for those who really need nursing home care to receive it" (Lave, 1985, p.13).

²⁶ At the same time, many residents enter a nursing home as private pay patients, and then convert to Medicaid shortly thereafter. Presumably, these patients (and their families) would be highly sensitive to price at the time of admission, even if they become price insensitive when they convert to Medicaid. This factor may temper estimates of "induced" demand for nursing home care, at least as applied to decisions to enter a nursing home.

²⁷ An analysis of nursing home demand with cross-sectional data from 1969-73 indicates that there has been a considerable amount of excess demand for nursing home care nationally (Scanlon, 1980). Admittedly, this study's empirical results are now more than two decades old.

4. Influence the Types of Beds Built

When states officials estimate the need for nursing home beds within each state, they often estimate the type as well as the number of beds needed. States can thus use the way they estimate the need for beds to encourage the construction of particular types of beds. For example, a state could set need projections higher for ICF than SNF beds to encourage providers to expand ICF care within the state.

In New York, several rules were changed to encourage the submission of CONs for AIDS beds and facilitate the approval of the submitted CON. New York eliminated the bed cap on construction for AIDS beds, eliminated the 10 percent equity requirement sponsors needed to contribute up front, and waived the rule that sponsors have to demonstrate the ability to cover the first year's operating losses. Furthermore, the state will loan the money to construct AIDS beds (New York City Office of the Comptroller, 1989). An Ohio CON policy requires development of congregate and personal care beds in a three to one ratio with SNF/ICF beds.

5. Assure Equalized Bed Distribution across the State

Another goal of state CON policy is to prevent excess nursing home bed supply in one area of the state or mitigate an undersupply in another to limit the number of patients placed in nursing homes far from their home or family. Massachusetts and Georgia sought to equalize bed distribution within their borders by using the statewide ratio of beds to elderly as a target for beds in all parts of the state (Feder and Scanlon, 1980). Tennessee has a similar methodology in which the goal for each county is 44 beds per 1,000 persons 65 and older. New facilities are allowed in counties below the ratio and in counties where the occupancy rate is 95 percent. Nursing homes also must be within 30 minutes travel time of the majority of the county population as a criteria for CON approval.

CON has limited effectiveness in equalizing bed distribution because in some states -- if reimbursement is insufficient to attract capital investment or bed need exists in a high cost or high crime area -- building of new facilities is unlikely to occur, even if those are the only areas of the state where building is allowed (Feder and Scanlon, 1980). State officials in California

and New York report that there is chronic need in San Francisco and New York City where land costs are high.

6. Assure Access for Medicaid Patients

As discussed above, studies using national data from the late 1970s and early 1980s showed that access to nursing homes for Medicaid patients was restricted, while demand by private patients was satisfied (Scanlon, 1980; Nyman, 1989). In some cases, states mandate access for Medicaid patients. Ohio now requires that all nursing home assignments must be on a first come, first serve basis for nursing homes with less than an 80 percent Medicaid census (U.S. GAO, 1990).

To assure access for Medicaid patients, other states require that providers submitting a CON meet certain requirements for accepting and providing care for Medicaid patients. For example, New York requires that newly constructed facilities have a Medicaid admission rate of at least 75 percent of the health systems agency (HSA) average. The state examines payer mix as part of the CON review to determine financial feasibility. As noted above, other states have enacted and enforced Medicaid "anti-discrimination" laws.

7. Protect Occupancy Rates in Nursing Homes

States CON policies also aid current nursing home operators by targeting nursing home occupancy rates. States desire high occupancy rates because nearly all states set Medicaid reimbursement rates based on a certain target occupancy rate (Grimaldi, 1982). During an interview with Lewin-VHI, Tennessee state officials indicated that a principal goal of their CON policy was to increase nursing home occupancy rates. Targeting high occupancy rates in turn benefits nursing home operators by allowing them to increase their profits or cover their costs by assuring that the homes will contain a relatively high number of private pay patients.

When states repeal their CON regulations, nursing home occupancy rates often fall. For example, when Arizona repealed CON in 1982, occupancy fell from 95 to 80 percent as the number of nursing homes increased from 79 to 118 between 1982 and 1985 (Heller and Chase, 1988). After CON expired in Utah on December 3, 1984, occupancy decreased from

90 to 76 percent as capacity increased 25 percent (McFall, 1987). In California, the response to sunseting CON on January 1, 1987, were not as dramatic. Occupancy remained steady at 95 percent from January until June 1981 (Eckery, 1987). Factors other than deregulation may be primarily responsible for the lack of provider reaction to the CON sunset. Difficulties in staffing nursing homes resulting from shortages of skilled nursing staff and the low Medi-Cal reimbursement for freestanding SNF care (\$48.90 per day) created few incentives for expansion (Eckery, 1987).

8. Limit Operator Expansion and Promote Quality of Care

Through the CON process states can prevent operators with previous deficiencies or quality problems from expanding. For example, in New York a CON can be rejected on the basis of, among other things, "character" of the proposed sponsor (Lewin-VHI, 1990a). New York reviews the applicant's licensure record in and out of state to determine if the sponsor has delivered quality care in the past (Feder and Scanlon, 1980).

Meeting certain building quality standards can also be part of the CON review. New Jersey passed a law that bars providers who are not in compliance with certain licensure conditions from submitting CON applications for a year after corrections.

On the other hand, by limiting the supply of nursing home beds CON makes it difficult for states to enforce quality standards by closing nursing homes (Feder and Scanlon, 1980). In many states, a home can not be closed until alternative placements are found for every resident. In states with long alternative care waiting periods and high nursing home occupancy rates the costs of finding twenty to sixty available beds to transfer patients can be so prohibitive that a facility will be allowed to continue operating out of compliance with quality licensure standards.

B. How Do States' CON Policies Work?

Certificate-of-need methodologies vary dramatically across states. This section reviews the characteristics of CON policies, presents an overview of CON review criteria, and discusses the effectiveness of CON policies in controlling nursing home bed supply.

1. Characteristics of CON Policies

While the Health Planning and Resource Development Act of 1984 established minimum standards for CON policies established by the States, the dollar threshold for CON programs varies substantially from state to state (see Appendix B). Eighteen of the 38 states and the District of Columbia with CON policies have a zero dollar threshold for new services and eight other states have thresholds of \$300,000 or less. In addition, 14 of the states with CON policies review any new long term care service or the addition of any new long term care beds regardless of the cost. Thresholds for capital construction of long term care facilities range from zero (in Arkansas, Indiana, Nevada, Oregon, and Wisconsin), to \$4 million (in Hawaii). The objective of states with high dollar thresholds is to review only construction projects which involve the replacement or addition of an entire facility. States such as Oregon, Indiana, New York, and Wisconsin have decided to review all, or nearly all, construction projects.

CON decisions are made in a variety of ways among the states (Health Facilities Commission, 1990). Of the 38 states and the District of Columbia with CON programs, 24 (or 62 percent) have an individual (usually an agency head or a state health department executive) designated to approve or disapprove CON proposals. The remaining 15 states depend upon boards, councils, or commissions for making CON decisions. Most of these board members are appointed by the states' governors; and the size of these boards range from three to 15 members. The decision-making entity of most of the states with CON policies (28 out of the 39) receive a recommendation from a health planning agency, department officials, or the board staff who have analyzed the CON proposal. The remaining 11 states base their decisions on their independent assessments of the proposal.

The period of time it takes states to make a decision about the CON application also varies dramatically. It takes most states three to four months to render a decision. However, it could take less than three months (in states such as Nebraska, Indiana, and Alabama) and as much as six to 18 months (in states such as New York and Pennsylvania).

2. CON Review Criteria

Most CON policies specify the criteria that bed supply regulation must take into account. In broad terms, these criteria usually include need determination, financial feasibility, and the quality of the nursing home (Feder and Scanlon, 1980).

a. Need Determination

States use different approaches to determine the adequacy of their nursing home bed supply. In general, the approaches can be broadly classified into demand-based and need-based categories (Feder and Scanlon, 1980). The demand-based approach (also referred to as the current-use approach) projects future bed need on the basis of the number in current use, adjusted for expected changes in the size of the elderly population and a nursing home occupancy standard. The need-based approach establishes a norm or target ratio of beds to elderly population that is independent of current use. Depending on how refined each state's bed need methodology is, state policy makers can use these methods to examine bed need state-wide, by county or other local region, or by type of bed needed (i.e., SNF versus ICF).²⁸

Below, we provide examples of how three states determine bed need:

Tennessee

Nursing homes may increase or decrease the total number of licensed beds by the lesser of 10 beds or 10 percent of the home's licensed capacity over a one-year period without obtaining a CON (although changes must be reported to Tennessee's Health Facilities Commission).

Tennessee's bed need methodology is demand-based, and "need" is determined on a county basis. Approval of additional nursing home beds is based on three main factors: (1) a standard of 44 beds per 1,000 elderly aged 65 and over; (2) facilities must be within 30 minute travel time of the majority of a county's population; and (3) a county and its surrounding counties' occupancy rates must be 95 percent or greater. The State grants exceptions to

²⁸ Although this distinction is no longer applicable due to legislation in the Omnibus Budget Reconciliation Act of 1987.

exceed the 44 beds per 1,000 elderly criteria if all outstanding CON projects which result in a net increase in beds are constructed and in operation and if existing facilities are "completely utilized" (meaning that the average occupancy rate for the county is at least 95 percent).

A recent State audit shows, however, that these criteria are not always adhered to (Tennessee Comptroller of the Treasury, 1990). The State examined a sample of 18 CON applications and found that only two met all three health planning criteria discussed above. Of the two, one was denied with no explanation for the denial. Of the 16 not meeting the health planning criteria, 10 were approved anyway. Five of the ten approvals were for totally private pay or non-certified beds or facilities. The other five approvals were for Medicaid SNF/ICF beds, even though bed need in the county was in excess of the standard, CON beds in construction ranged between 30 and 475 beds, and occupancy rates ranged from 88 percent to 93 percent. Therefore, it appears that the State uses other criteria in their decisions to approve CON applications. It is unclear, however, whether and how frequently other states deviate from their stated policies for approving CON applications.

Wisconsin

The State of Wisconsin technically does not have a bed need methodology. In 1983, the State set a bed limit (or cap) at 84 beds per 1,000 elderly aged 65 and over. Every two years, the legislature decides if this cap should be increased or decreased; however, the cap has remained the same since 1983.

While the State has decided not to build more beds, it maintains a bed allocation methodology for the redistribution of closed nursing home beds. Beds can be either reallocated within "planning areas" (a collection of counties), or can be changed into community placement slots. Planning areas may compete for beds if the ratio of actual use to expected use is greater than one and if the average countywide occupancy rate is greater than 94 percent. Counties within planning areas may receive priority if they are designated as a "high bed need" county. "High bed need" counties are those that have a ratio of beds to

elderly population of 64 per 1,000 (or 80 percent of the state average), and an occupancy rate greater than 92.5 percent (or the state's average).

Ohio

The State of Ohio uses a sophisticated methodology to determine bed need. A normative bed need ratio of 163 beds per 1,000 elderly aged 75 and over is used to calculate bed need by county. Net migration, where counties with high outmigration receive additional beds, is incorporated into the formula as well as a risk adjustment factor and an adjustment for community-based service use (Lewin-VHI, 1991).

The migration adjustment assumes that 50 percent of net outmigration for nursing home care from each county is due to lack of beds in the county of residence. The adjustment was established to distribute beds more evenly in the state and to reflect the high value that Ohio places on locally available care for its residents.

The risk adjustment factor is used to take into account geographic variations in nursing home use which are caused by socioeconomic factors, health care use and other factors not directly related to the supply of nursing home beds. Multivariate regression analysis performed by the State showed that, in rural counties, nursing home use per 1,000 residents aged 75 and over was related to employment of women aged 35 to 55 and to acute care hospital use rates. In metropolitan counties, use was related to employment of women and to the likelihood that the elderly (aged 75 and over) were living alone. The bed need methodology, therefore, includes an adjustment for these factors.

The community-based service use adjustment equates two placements in Ohio's PASSPORT program (Ohio's preadmission screening program) to one nursing home bed. Since PASSPORT provides in-home services to persons who might otherwise be institutionalized, the program serves as a replacement for some nursing home capacity. Therefore, the State hopes that the adjustment takes account of growth in the community-based system.

b. Review of Financial Feasibility

Medicaid rates (including capital reimbursement rates) are used in the financial feasibility review of the CON proposal (Feder and Scanlon, 1980). The applicant's assumptions used to project volume and level of payment from Medicaid and other payers are assessed, and if found inconsistent with Medicaid payment policy or unrealistic, the CON application is usually denied.

For example, New York State's review for financial feasibility entails both operating and capital cost analyses and involves a projection of revenue based on the mix of Medicaid, Medicare, and private paying patients. For a project to be approved, it must demonstrate adequate revenue to cover its expenses and it must meet State and Health Systems Agency requirements for serving Medicaid patients. When a facility is sold for a price higher than that approved for reimbursement (Medicaid Allowable Transfer Price), it must demonstrate that it can generate revenue to cover unreimbursed capital expenses. The means for covering such expenses include operating profits, rates charged to private paying patients that are higher than Medicaid rates, and additional equity contributed by the sponsor.

c. Review of Quality

Some states use CON policies to control the quality of nursing home care. This policy usually supplements state licensure policies (Feder and Scanlon, 1980). That is, it is politically and operationally easier to deny a facility's request to expand than it is to revoke its license completely.

New York is perhaps the most stringent enforcer of this policy. State CON officials review the applicant's licensure record both in and out of state. If it is determined that the applicant's record is unacceptable, the CON application is denied.

C. How Effective are CON Policies in Controlling Nursing Home Bed Supply?

Limited evidence seems to suggest that CON policies control the supply of nursing home beds, thus constraining Medicaid expenditures. Unfortunately, there is no empirical evidence demonstrating the effect of CON laws on the supply of nursing home beds or on per-

unit nursing home costs. Most of the evidence has been gathered through case studies (Feder and Scanlon, 1980) and through discussions with state officials.

When evaluating a CON policy, Feder and Scanlon (1980) suggest that it is necessary to consider its effects on the following components:

- total nursing home bed supply;
- distribution of beds by geographic region and level of care;
- availability of beds to different types of users;
- quality of care provided; and
- costs to the state.

In their case studies of eight states, Feder and Scanlon found that CON has controlled the rate of growth of nursing home beds. The authors admit, however, that it is difficult to evaluate the independent effect of CON because the nursing home market is influenced by several factors in addition to CON. The factors include: the socioeconomic characteristics of the state population, Medicaid reimbursement rates, licensure requirements, and utilization review programs.

There are two other reasons why it is difficult to formally evaluate the ability of CON policies to control the bed supply. First, when CON policies are initially enacted there usually is a surge in building because of applications submitted between the date of CON's enactment and the starting date. After the enactment of CON policies in several states, Feder and Scanlon found a 20 percent increase in the number of nursing home beds in Georgia, a 25 percent increase in Tennessee, and a large growth spurt in California. Second, when CON policies sunset, states often impose construction moratoria which continue to control the bed supply and make building surges impossible (Ellet, 1987). Of the twelve states to repeal their CON laws, seven imposed construction moratoria in their place.

New Mexico was the only other state that did not implement a moratorium after it repealed its CON law in June 1983. State officials believe that a spurt in nursing home growth

did not occur after CON sunset because the sparse population distribution in the state does not encourage competition (Tennessee Health Facilities Commission, 1990).

The best evidence that CON policies restrict nursing home bed growth is presented in the cases of Arizona, Utah, and Kansas. When Arizona repealed its CON policy in 1982, the state experienced unprecedented growth in the number of new nursing homes -- from 79 homes to 118 homes -- in three years (Heller and Chase, 1985). After 1986, however, growth remained stable (Lewin-VHI, 1991). It is believed that the building surge disappeared in 1986 because of the problems it created earlier -- decreased occupancy rates (from 95 percent in 1982 to 80 percent in 1986), the unavailability of nursing home staff, and decreased growth in reimbursement rates (from 7 to 10 percent annually to about 3 percent annually) (Belisle, 1987).

A similar pattern occurred in Utah after its CON policy was repealed on December 31, 1984. Between 1985 and 1987, the number of nursing home beds increased 25 percent while and during the same time the statewide average occupancy rate decreased to 76 percent from 90 percent (McFall, 1987). In January 1989 Utah imposed a construction moratorium on new nursing home beds.

Finally, Kansas terminated its CON policy in 1985. Prior to that year, the number of nursing home beds increased at an average of 114 beds per year. After the CON was repealed, nursing home beds increased at an average of 536 per year and occupancy rates fell to 88 percent from 91 percent.

Evidence from our discussions with seven states shows that state officials believe that CON policies have been effective in controlling the number of beds. While none of the seven states have formally evaluated the effectiveness of CON, most believe that maintaining or reducing the number of beds per elderly population is an indication that CON works. For example, a tight CON policy in Oregon has precluded the building of even a single new nursing home bed in that state since 1985. As a result, the number of beds per 1,000 elderly declined from 49 beds in 1980-81 to 39 beds in 1989-90. State officials in Tennessee estimate that

between 1984 and 1989 CON decisions on nursing home bed applications resulted in a "Medicaid cost avoidance" of \$72,788,269, of which \$21,836,481 was saved by the state because the state's share of Medicaid program costs is 30 percent (Tennessee Comptroller of the Treasury, 1990).²⁹

In addition to its CON policy, Wisconsin has had a construction moratorium on new nursing home beds since 1981. Between 1981 and 1989 there has been less than a 1 percent growth in the number of licensed beds in Wisconsin; the number of beds per 1,000 elderly decreased from 72 to 64. However, the statewide occupancy rate remained stable at 92 percent. State officials in Wisconsin attribute their ability to maintain a stable occupancy rate with a decreasing number of beds per elderly population to the expansion of home and community-based services.

Texas sunsetted its CON law in September 1985; the total number of certified beds at that time was 90,949. At the same time, a construction moratorium was imposed on new nursing home beds. In one year, however, the number of certified beds grew 3.4 percent despite the imposition of the moratorium. The bed supply continued to grow throughout the late 1980s to 102,331 in 1989 (or a 12.5 percent increase since 1985). State officials in Texas attribute this growth to two factors. First, the initial growth between 1985 and 1986 occurred because the Texas Health Facilities Commission did not carry out its duties during the last six months of 1985 before the dismantling of the CON policy. As a result, all CON applications during that period had to be grandfathered into the new law. Growth after 1986 is attributed to continuous amendments to the moratorium that allowed additional beds to be built. In December 1989, the moratorium was repealed. As of May 1991, an additional 5,558 certified beds have been built in Texas.

²⁹ Medicaid cost avoidance refers to the cost the Medicaid program avoids when projects that generate Medicaid costs are denied. State officials in Tennessee use nursing homes to identify Medicaid cost avoidance because nursing home projects directly translate into Medicaid beds, and the cost of those beds to the Medicaid program can be estimated.

D. Summary

State governments are increasingly faced with the problem of containing large increases in their Medicaid budgets. As long term care is such a large component of Medicaid spending, much attention has naturally been paid to curtailing nursing home expenses. A primary policy instrument used by states to contain nursing home costs is CON programs.

CON programs review the need for large medical capital investments within the state. In the case of nursing homes, CON has been used by states to limit the expansion of current nursing home facilities as well as to limit the entry of new facilities. By limiting the construction of new beds, CON limits the number of beds available for Medicaid patients. Coupled with the ability of states to control Medicaid nursing home reimbursement levels, CON programs probably have reduced the Medicaid long term care expenditures of states.

Currently, 38 states and the District of Columbia have CON programs. These programs differ widely; some states (18) require a CON for any medical capital investment while others have higher dollar thresholds. While some states process CON requests in as little as three months, states such as New York and Pennsylvania take as much as two years to reach a decision. Most state CON programs also review the financial viability of the new nursing home facility (or new beds) and the effect this will have on the quality of care.

In deciding to approve or deny a CON for new nursing home beds, states apply different criteria to determine the "need" for the new beds. These approaches, however, are broadly divided into demand-based approaches which project bed needs on the basis of the number of beds in current use, and needs-based approaches which establish a target beds to elderly population ratio. In practice, however, states do not always consistently apply their own bed need criteria when deciding whether to approve or deny a CON request.

States use CON policy to try to achieve other goals. These include influencing the type of beds being constructed, assuring access for Medicaid patients, maintaining high levels of nursing home occupancy, and promoting the quality of care. States also desire to encourage the development of non-institutional long term care services by limiting the ability to invest in

new nursing home beds. Few states, however, have also set aside funds to encourage alternative treatment methods. Admittedly, the logical connection between limiting supply on the one hand and improving quality or access to care on the other is often difficult to discern.

CHAPTER 4

MEASURES THAT STATE POLICYMAKERS HAVE ADOPTED TO MITIGATE A NURSING HOME ACCESS PROBLEM

Common methods that state policymakers have used to mitigate nursing home access problems include:

- restructuring the reimbursement system, including capital reimbursement;
- creating special units or facilities for difficult-to-place patients (such as ventilator-dependent patients or persons with Alzheimer's disease);
- increasing funding for alternative care services, including the implementation of prescreening programs to encourage appropriate nursing home placement; and
- expanding the supply of nursing home beds by lifting CON restrictions.

A. Restructure the Reimbursement System

There are four strategies states have used to improve access for Medicaid patients through reimbursement policy: (1) increase Medicaid operating rates; (2) equalize payment rates for private payers and Medicaid payers; (3) implement a case mix payment system; and (4) revise the capital reimbursement system to encourage appropriate investment in nursing homes (Manard, et al., 1991). The theory behind these strategies remains incomplete and the empirical findings to support the use of these strategies are often inconclusive. In brief, economic theory predicts that higher Medicaid rates would lead to improved access for Medicaid patients; however, empirical research does not consistently support this theory.³⁰ Second, payment rate equalization has not been widely used by states, and formal evaluations do not exist as to the effectiveness of this approach. Anecdotal evidence, however, suggests that payment rate equalization improves access for Medicaid patients. Third, with regards to using case mix payments to improve access for Medicaid patients, and in particular heavy care patients, some research literature suggests that case mix rates may improve access for some

³⁰ For a full discussion of these issues, see Manard, et al., 1991.

patients.³¹ Fourth, there is little consensus about the best way to reimburse nursing home capital costs. While some recent studies have pointed out some favorable characteristics of fair rental systems, no general models that fully address concerns about equitable payment for all providers and the need for appropriate cost control have been evaluated.

B. Create Special Units or Facilities for Difficult-to-Place Patients

While case mix payments systems may mitigate access problems for "heavy care" Medicaid patients, there are some patients for whom reimbursement rates may still not be high enough to cover the cost of care. Through our interviews with state officials we found that access to nursing homes for ventilator-dependent and head injury patients, and patients with Alzheimer's disease or AIDS, is extremely difficult. We found that states have had to provide special incentives, such as negotiated rates with nursing homes or other post-acute care sites (as done in Oregon) or the development of specialty care facilities (as done in Wisconsin), to address access problems for these patients.

C. Increase Funding for Alternative Care Services

While it has not been shown empirically that home and community-based services are a cost-effective substitute for nursing home care, increased funding for alternative care services coupled with a nursing home preadmission screening program may improve the available options for long term care and lead to a reduction in inappropriate nursing home placements (Weissert, 1988; Lave, 1985).

For example, Medicaid section 2176 waiver programs, while limited, have added substantial variety to state long term care programs. About one-half of the aged/disabled

³¹ Some recent analyses, have questioned the extent to which case-mix systems have been successful at increasing access for heavy care patients (Weissert and Musliner, 1992). It should be noted, however, that "case-mix reimbursement" systems differ greatly with respect to the incentives imbedded in the details of the systems. For example, the New York system pays higher Medicaid rates to facilities with heavier care residents, even if the heavier care residents are private payors. Thus, it is not surprising that "access" for heavy care Medicaid residents has been little affected by the system. Moreover, case-mix may not address some "access" problems such as hospital backup due to Medicaid eligibility certification problems.

waiver programs use stringent criteria for entry into home and community-based programs, such as requiring the applicant to be in the hospital or a skilled nursing facility, requiring the applicant to have applied for Medicaid nursing home coverage, or stipulating that the applicant must be capable of receiving care within a specified cost ceiling (Laudicina and Burwell, 1988).

Two key factors in being able to demonstrate the cost-effectiveness of these services are effective targeting and the ability to show that the person would have entered a nursing home without the program. With a shortage of nursing home beds for Medicaid patients, it is difficult to achieve savings with these programs because any Medicaid eligible who is diverted from entering a nursing home is likely to be replaced by another Medicaid eligible (Lave, 1985). The only way the program can produce cost savings is if community-based care can be substantial for nursing home beds and the cost of community-based care for these patients is less than the cost of nursing home care.

D. Increasing the Supply of Nursing Home Beds

Finally, some states have attempted to address access problems by expanding the supply of nursing home beds, either through allowing CON laws to sunset or lifting construction moratoria. Before implementing this option, however, it is important to diagnose the antecedents of the "access" problem. Expanding bed supply may not improve access if the problem is created by inadequate nursing home reimbursement rates, delays in determining Medicaid eligibility, or inadequate facilities for special needs patients (e.g., heavy care or Alzheimer's patients).

E. Summary

State policymakers have several strategies they can use to mitigate an access problem. Common strategies adopted by states include:

- restructuring the Medicaid reimbursement system, either through rate adjustments, case mix payments, or adjustments to capital reimbursement;
- creating special units or facilities for difficult-to-place patients;

- increasing funding for alternative care settings, coupled with a nursing home preadmission screening program; and
- increasing the supply of beds.

It is important for states to assess the goals and objectives of their long term care systems and learn from the experiences of other states. State policymakers need to keep in mind, however, that policies of one state should not always be adopted "as is" to other states given the unique aspects and interactions of state policies. For example, the impact of capital reimbursement on nursing home investment varies across states depending upon characteristics of the nursing home care market (Manard, et al., 1991). Changes in capital reimbursement which would have large impacts on investment in one state may have little effect in another. Operating payment rates, private patient demand, state and local regulatory environments, and geographical financial markets may all affect the impact of capital reimbursement changes. The local environment should be well understood before preceding with changes to a state's long term care system.

APPENDIX A

SELECTED CHARACTERISTICS OF THE NURSING HOME BED SUPPLY

Data from the 1991 National Health Provider Inventory (NHPI) reported by Sirocco (1994) was used to construct the following tables. The National Center for Health Statistics (NCHS) conducted the 1991 NHPI by mailing a survey to 73,106 addresses. NCHS created the mailing list by matching state and national directories of nursing homes and board and care homes obtained through the Agency Reporting System against a master file from the 1986 Inventory of Long-Term Care Places (ILTCP), the most recent previous survey of such places. New facilities found in a directory not on the master file received a new, unique ID number and were added to the facility file. The NCHS then used a matching algorithm to identify and eliminate duplicates.

The first mailing occurred on April 5, 1991. Non-responding facilities received a second mailing on May 10, and then a third on June 14. After the third mailing, 21,600 facilities had not responded, including nearly 17,200 board and care homes. The NCHS then contacted all nursing home non-respondents and half (8,578) board and care non-respondents by telephone. Excluding the 8,578 non-responding board and care homes that did not receive a phone contact, 99 percent of the facilities responded to the facility; by including board and care homes that did not receive a phone contact, the facility response rate fell to 84 percent.

Table A-1

Number of Facilities and Beds in Nursing Home and Board and Care Homes: 1991 NHPI

Type of Facility	Facilities	Beds	Beds per Facility	Residents	Average Occupancy Rate
All Facilities	46,962	2,098,336	45	1,891,257	90.1%
Nursing Homes	15,511	1,615,686	104	1,478,217	91.5%
Freestanding	14,744	1,559,394	106	1,426,320	91.5%
Hospital-Based	767	56,292	73	51,897	92.2%
Board and Care Homes	31,431	482,650	15	413,040	85.6%
Not for the Mentally Retarded	18,626	362,014	19	302,820	83.6%
For the Mentally Retarded	13,169	120,636	9	110,220	91.4%

Source: Sirrocco (1994).

Table A-2

**Number of Facilities and Beds for Hospital-Based Nursing Homes
by Selected Characteristics: 1991 NHPI**

Selected Characteristic	Facilities	Beds	Beds per Facility	Residents	Average Occupancy Rate
Total Facilities	767	56,292	73	51,897	92.2%
Bed Size					
Under 25 Beds	145	2,327	16	2,022	86.9%
25 to 99 Beds	477	24,516	51	22,686	92.5%
100 to 199 Beds	87	12,518	144	11,782	94.1%
200+ Beds	48	16,931	353	15,407	91.0%
Ownership					
Profit	63	5,344	85	4,819	90.2%
Non-Profit	432	27,563	64	25,686	93.2%
Government	272	23,385	86	21,392	91.5%
Geographic Region					
Northeast	138	16,398	119	15,233	92.9%
Midwest	279	17,406	62	16,132	92.7%
South	172	12,104	70	11,234	92.8%
West	176	10,384	59	9,298	89.5%

SOURCE: Sirrocco (1994).

Table A-3

**Number of Facilities and Beds for Free-Standing Nursing Homes
by Selected Characteristics: 1991 NHPI**

Selected Characteristic	Facilities	Beds	Beds per Facility	Residents	Average Occupancy Rate
Total Facilities	14,744	1,559,394	106	1,426,320	91.5%
Bed Size					
Under 25 Beds	563	8,101	14	7,105	87.7%
25 to 99 Beds	7,041	456,704	65	418,225	91.6%
100 to 199 Beds	6,028	792,348	131	724,966	91.5%
200+ Beds	1,112	302,241	272	276,024	91.3%
Ownership					
Profit	10,522	1,086,907	103	984,560	90.6%
Non-Profit	3,497	372,272	106	348,090	93.5%
Government	725	100,215	138	93,670	93.5%
Geographic Region					
Northeast	2,654	328,435	124	312,864	95.3%
Midwest	5,137	518,917	101	468,636	90.3%
South	4,708	503,522	107	457,944	90.9%
West	2,245	208,520	93	186,876	89.6%

SOURCE: Sirrocco (1994).

Table A-4

**Number of Facilities and Beds for All Board and Care Homes
by Selected Characteristics: 1991 NHPI**

Selected Characteristic	Facilities	Beds	Beds per Facility	Residents	Average Occupancy Rate
Total Facilities	31,431	482,650	15	413,040	85.6%
Bed Size					
Under 25 Beds	27,377	204,816	7	179,473	87.6%
25 to 99 Beds	3,352	160,883	48	138,035	85.8%
100 to 199 Beds	544	71,863	132	59,605	82.9%
200+ Beds	158	45,088	285	35,927	79.7%
Ownership					
Profit	19,726	309,469	16	259,041	83.7%
Non-Profit	9,694	143,142	15	128,516	89.8%
Government	2,011	30,039	15	25,483	84.8%
Geographic Region					
Northeast	5,660	110,359	19	97,134	88.0%
Midwest	8,817	105,515	12	91,742	86.9%
South	7,090	131,982	19	111,840	84.7%
West	9,864	134,794	14	112,324	83.3%

SOURCE: Sirrocco (1994).

APPENDIX B

SELECTED CHARACTERISTICS OF STATE CON PROGRAMS

Table B-1

Characteristics of State CON Programs, 1978 to 1992

State	Type of Regulation in 1992		Year CON or Moratoria Ended	Number of Years with CON or Moratoria, 1978 to 1992	CON Applications, 1992	
	CON	Moratoria			Dollar Value (millions)	Percentage Denied (Dollar Value)
Alaska	YES	NO	NR	15	\$13	0.0%
Alabama	YES	NO	NR	15	\$28	0.0%
Arkansas	YES	YES	NR	15	\$35	29.2%
Arizona	NO	NO	1982	4	NC	NC
California	NO	NO	1987	9	NC	NC
Colorado	NO	NO	1987, 1990*	12	NC	NC
Connecticut	YES	YES	NR	15	\$63	0.0%
D.C.	YES	NO	NR	15	NS	NS
Delaware	YES	NO	NR	14	\$9	54.5%
Florida	YES	NO	NR	15	NS	NS
Georgia	YES	NO	NR	14	\$23	NS
Hawaii	YES	NO	NR	15	NS	NS
Iowa	YES	O	NR	15	\$21	6.0%
Idaho	NO	NO	1983	4	NC	NC
Illinois	YES	NO	NR	15	NS	NS
Indiana*	YES	NO	NR	15	\$0	NA
Kansas	NO	NO	1985	7	NC	NC
Kentucky	YES	YES	NR	15	\$10	80.4%
Louisiana	NO	NO	1985**	1	NC	NC
Massachusetts	YES	YES	NR	15	NS	NS
Maryland	YES	NO	NR	15	\$57	20.4%

Table B-1 (Continued)

Characteristics of State CON Programs, 1978 to 1992

State	Type of Regulation in 1992		Year CON or Moratoria Ended	Number of Years with CON or Moratoria, 1978 to 1992	CON Applications, 1992	
	CON	Moratoria			Dollar Value (millions)	Percentage Denied (Dollar Value)
Maine	YES	NO	NR	15	\$0	NA
Michigan	YES	NO	NR	15	NS	NS
Minnesota	NO	YES	1984*	15	NC	NC
Missouri	YES	YES	NR	13	\$35	49.4%
Mississippi	YES	YES	NR	14	\$0	NA
Montana	YES	NO	NR	15	\$9	1.4%
North Carolina	YES	NO	NR	14	NS	NS
North Dakota	YES	NO	NR	15	NS	NS
Nebraska	YES	NO	NR	14	\$4	0.0%
New Hampshire	YES	NO	NR	14	\$7	0.0%
New Jersey	YES	YES	NR	15	NS	NS
New Mexico	NO	NO	1984	6	NC	NC
Nevada	YES	NO	NR	15	NS	NS
New York	YES	NO	NR	15	NS	NS
Ohio	YES	NO	NR	15	NS	NS



Table B-1 (Continued)

Characteristics of State CON Programs, 1978 to 1992

State	Type of Regulation in 1992		Year CON or Moratoria Repealed	Number of Years with CON or Moratoria, 1978 to 1992	CON Applications, 1992	
	CON	Moratoria			Dollar Value (millions)	Percentage Denied (Dollar Value)
Oklahoma	YES	NO	NR	15	\$60	6.5%
Oregon	YES	NO	NR	15	\$5	0.0%
Pennsylvania	YES	NO	NR	14	NS	NS
Rhode Island	YES	NO	NR	15	\$37	64.0%
South Carolina	YES	NO	NR	15	\$6	34.3%
South Dakota	NO	YES	1988*	15	NC	NC
Tennessee	YES	NO	NR	15	\$19	59.0%
Texas	NO	NO	1985	15	NC	NC
Utah	NO	NO	1984, 1990**	12	NC	NC
Virginia	YES	YES	NR	15	N2	NS
Vermont	YES	NO	NR	14	\$2	0.0%
Washington	YES	NO	NR	15	NS	NS
Wisconsin	YES	NO	NR	15	\$44	0.0%
West Virginia	YES	YES	NR	15	\$0	NA
Wyoming	NO	NO	1985	7	NC	NC

Guide to Table

* -- moratoria (e.g., ban on new beds) replaced CON program, ** -- moratoria ended

NR -- not relevant, CON program in place; NS -- no statistics available, NC -- no CON program, NA -- no CON applications

SOURCE: Harrington, DuNah, and Curtis (1993).

APPENDIX C

**NUMBER OF LICENSED BEDS PER 1,000 PERSONS AGE 65 AND OVER
AND 85 AND OVER: 1978 TO 1992**

Table C-1

**Number of Licensed Nursing Home Beds per 1,000 Persons
Aged 65 and Over and Aged 85 and Over: 1978 to 1992**

	Ratio of Licensed Beds per 1,000 Population Aged 65 and over					Ratio of Licensed Beds per 1,000 Population Aged 85 and over				
	1978	1982	1986	1990	1992	1978	1982	1986	1990	1992
Alaska	92.3	82.5	53.2	45.0	41.3	1,420.0	998.8	836.0	677.3	610.5
Alabama	47.3	46.4	44.8	43.2	42.8	597.7	638.2	488.0	430.7	405.6
Arkansas	61.8	62.1	65.9	64.3	60.5	752.8	806.2	688.9	611.3	601.2
Arizona	19.2	20.9	33.5	33.4	32.6	308.9	309.9	460.4	416.6	378.5
California	44.2	44.2	40.8	40.3	40.3	534.6	461.8	419.3	413.2	402.5
Colorado	84.7	69.2	61.7	60.8	57.6	860.5	677.4	600.9	590.6	546.0
Connecticut	69.3	67.7	65.9	65.6	60.8	706.9	651.9	638.2	609.1	592.8
D.C.	25.8	26.7	37.2	60.8	60.8	257.3	237.1	303.1	330.5	319.9
Delaware	49.3	55.5	54.3	55.2	54.3	555.7	587.6	571.1	606.7	615.5
Florida	22.3	22.3	20.9	27.3	60.8	337.7	303.2	305.8	323.3	303.7
Georgia	62.7	63.0	57.6	56.8	60.8	830.1	771.3	666.3	593.3	593.7
Hawaii	30.0	30.8	22.3	27.3	25.7	479.1	403.8	353.7	476.9	294.4
Iowa	79.9	80.5	80.5	76.7	81.7	707.9	655.3	639.7	639.4	616.9
Idaho	50.6	46.4	44.2	45.7	45.7	571.8	505.9	477.2	806.2	452.6
Illinois	71.2	63.0	57.6	63.1	68.7	784.9	695.9	661.8	704.3	621.6
Indiana	73.3	82.5	79.4	83.9	82.2	807.0	853.5	790.2	472.5	772.6
Kansas	26.7	63.0	82.3	68.8	79.0	809.4	720.5	677.3	714.0	603.9
Kentucky	40.8	43.7	46.1	60.8	60.8	483.8	472.7	476.9	590.3	453.1
Louisiana	58.1	63.0	75.8	79.0	79.0	695.9	666.3	741.1	554.2	676.1
Massachusetts	61.8	57.1	58.1	52.0	63.3	590.3	507.7	508.3	520.7	527.7
Maryland	51.3	52.7	60.8	52.0	51.2	695.9	590.3	554.2	554.2	524.0
Maine	63.0	61.0	63.1	65.6	60.8	635.5	593.3	555.1	520.7	507.8

Table C-1 (Continued)

Number of Licensed Nursing Home Beds per 1,000 Persons
Aged 65 and Over and Aged 85 and Over: 1978 to 1992

	Ratio of Licensed Beds per 1,000 Population Aged 65 and over					Ratio of Licensed Beds per 1,000 Population Aged 85 and over				
	1978	1982	1986	1990	1992	1978	1982	1986	1990	1992
Maine	63.9	61.0	63.1	60.9	60.9	635.5	553.3	555.1	520.7	507.8
Michigan	52.5	42.0	47.3	46.4	44.3	591.7	505.0	494.3	469.4	436.3
Minnesota	86.0	85.5	86.1	81.9	80.2	793.9	714.6	696.1	640.9	618.0
Missouri	56.5	61.0	70.6	77.2	54.4	601.8	648.9	646.2	665.7	695.4
Mississippi	40.9	76.4	49.1	47.8	60.2	471.1	483.1	475.5	424.2	415.4
Montana	77.4	61.0	85.0	60.2	58.5	721.5	644.0	664.4	596.3	558.1
North Carolina	30.8	33.9	32.5	34.3	41.9	422.6	421.9	383.0	378.4	441.0
North Dakota	76.4	76.4	77.5	76.1	76.2	730.8	722.8	671.3	610.6	577.7
Nebraska	90.5	61.0	85.8	47.3	85.8	809.7	707.5	667.6	663.8	634.2
New Hampshire	60.7	61.0	57.4	54.4	53.2	647.9	630.2	539.0	492.4	458.5
New Jersey	35.6	38.1	41.1	46.4	41.9	419.6	413.3	438.6	473.0	415.4
New Mexico	27.2	32.5	39.9	39.7	39.2	339.6	387.4	453.2	424.4	403.5
Nevada	30.8	29.6	85.8	24.2	54.4	622.0	500.2	436.1	397.3	378.5
New York	42.8	42.8	43.3	44.2	44.7	457.2	410.4	397.7	390.2	382.2
Ohio	57.6	80.0	63.9	60.2	60.9	627.6	614.9	647.9	640.1	607.8

Table C-1 (Continued)

**Number of Licensed Nursing Home Beds per 1,000 Persons
Aged 65 and Over and Aged 85 and Over: 1978 to 1992**

	Ratio of Licensed Beds per 1,000 Population Aged 65 and over					Ratio of Licensed Beds per 1,000 Population Aged 85 and over				
	1978	1982	1986	1990	1992	1978	1982	1986	1990	1992
Oklahoma	72.0	71.6	74.4	78.2	79.5	822.5	749.3	728.8	707.8	687.2
Oregon	50.9	47.2	48.0	39.3	36.4	542.9	478.2	427.3	383.9	339.1
Pennsylvania	45.2	47.9	48.8	48.0	47.8	530.5	521.7	523.8	495.0	472.9
Rhode Island	50.9	68.6	68.6	66.5	66.5	728.0	653.7	663.9	628.2	608.7
South Carolina	36.7	40.0	35.2	36.4	38.7	533.2	528.7	449.5	437.4	440.7
South Dakota	83.0	82.0	40.0	80.1	79.5	733.5	667.3	523.8	607.3	591.6
Tennessee	37.5	48.0	51.2	50.5	55.1	479.8	560.6	553.6	567.2	530.9
Texas	74.9	70.6	68.6	68.6	67.9	952.4	810.7	718.9	693.8	658.0
Utah	50.9	45.6	46.7	50.5	50.2	663.9	530.0	538.8	586.4	518.6
Virginia	34.0	40.0	37.9	42.2	42.1	420.7	450.7	411.1	447.6	433.0
Vermont	50.9	40.0	53.4	55.1	53.6	487.5	449.5	467.0	495.0	437.5
Washington	69.2	50.9	50.5	50.5	46.7	719.1	598.2	516.8	508.4	474.9
Wisconsin	92.7	40.0	86.4	76.4	79.5	955.8	840.5	779.9	661.9	623.5
West Virginia	23.7	29.1	34.0	37.9	37.2	285.1	329.2	362.1	381.7	362.8
Wyoming	54.5	53.3	50.5	63.2	71.1	573.7	537.9	538.1	626.1	681.6

SOURCE: DuNah, Harrington, and Bedney (1993).

BIBLIOGRAPHY

- Baldwin, C. and Bishop, C. "Return to Nursing Home Investment: Issues for Public Policy," Health Care Financing Review, Summer 1984, vol. 5, no. 4, 43-52.
- Belisle, D. "Closure One Result of Arizona Deregulation," Provider, December 1987, vol. 13, no. 12, 13-14.
- Bishop, C. "Nursing Home Costs in Massachusetts," in Birnbaum, et al., Reimbursement Strategies for Nursing Home Care: Developmental Cost Studies, Final Report to the Health Care Financing Administration, DHEW Contract No. 600-77-0068, Abt Associates, Inc., 1979.
- Curtis, M., Harrington, C., and DuNah, R. "State Variation and Trends in Preadmission Screening," Institute for Health and Aging, University of California, 1993.
- Dubay, L., McBride, T. and Holahan, J. "Is There a Nursing Home Access Problem? A Review of the Empirical Evidence," Urban Institute Working Paper No. 6053-04-01, August 1990.
- DuNah, R., Harrington, C., and Bedney, B., "Variations and Trends in Licensed Nursing Home Capacity in the United State, 1978-1992," Institute for Health and Aging, University of California, 1993.
- Eckery, K. "Outlook Cautious after California CON Sunset," Provider, December 1987, vol. 13, no. 12, 16-20.
- Ellet, V. "A Look at How State Planning is Going," Provider, December 1987, vol. 13, no. 12, 12-13.
- Feder, J. and Scanlon, W. "Regulating the Bed Supply in Nursing Homes," Milbank Memorial Fund Quarterly, 1980, vol. 58, no. 1, 54-87.
- Friedland, R. Facing the Costs of Long-Term Care, Employee Benefit Research Institute, Washington, D.C., 1990.
- Grimaldi, P. Medicaid Reimbursement of Nursing-Home Care, American Enterprise Institute for Public Policy Research, Washington, D.C., 1982.
- Gruenberg, L., and Willemain, T., "Hospital Discharge Queues in Massachusetts," Medical Care, February, 1982, vol. XX, no. 2, pp. 188-200.

BIBLIOGRAPHY

(continued)

- Harrington, C. et al., "Revised Trends in States' Nursing Home Capacity," Health Affairs, Summer, 1992, pp. 170-180.
- Harrington, C., DuNah, R. and Curtis, M., "Trends in State Regulations of the Supply of Long Term Care Services," Institute for Health and Aging, September, 1993.
- Harrington, C., Swan, J., and Grant, L. "Nursing Home Bed Capacity in the States, 1978-86," Health Care Financing Review, Summer 1988, vol. 9, no. 4, 81-97.
- Heller, G. and Chase, M. "A Summary of a Study of the Impact of Deregulation on Health Facilities in Arizona," Office of Planning and Budget Development, Arizona Department of Health Services, November 1985.
- Kolb, D. and Krueger, D. "Controlling Expansion of the Nursing Home Industry: Effects of Prospective Payment Systems on Capital Formation," Topics in Health Care Financing, Spring 1984, 77-87.
- Laudicina, S. and Burwell, B. "A Profile of Medicaid Home and Community-Based Care Waivers, 1985: Findings of a National Survey," Journal of Health Politics, Policy and Law, Fall 1988, vol. 13, no. 3, 525-546.
- Lave, J. "Cost Containment Policies in Long-Term Care," Inquiry, Spring 1985, vol. 22, 7-23.
- Lazenby, H. and Letsch, S. "National Health Expenditures, 1989," Health Care Financing Review, Winter 1990, vol. 12, no. 2, 1-26.
- Lee, A. and Birnbaum, H. "Nursing Home Costs in New York State," in Birnbaum, et al., Reimbursement Strategies for Nursing Home Care: Developmental Cost Studies, Final Report to the Health Care Financing Administration, DHEW Contract No. 600-77-0068, Abt Associates, Inc., 1979.
- Lewin-VHI. "Evaluation of the Ohio Certificate of Need Program," prepared for the Certificate of Need Study Committee and the Ohio Department of Health, June 28, 1991.
- Lewin-VHI. "Analysis of the New York State Capital Cost Reimbursement System for Residential Health Care Facilities," prepared for the New York State Department of Health, Office of Health Systems Management, August 1990a.

BIBLIOGRAPHY

(continued)

- Lewin-VHI. "Descriptions of and Supplemental Information on Board and Care Homes Included in the Update of the National Health Provider Inventory," prepared for the Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, August 1990b.
- Manard, B., Fama, T., Mechanic, R., Coleman, K., and McPartlin, D. "Synthesis of Medicaid Reimbursement Options for Nursing Home Care," prepared for the Health Care Financing Administration, January 1991.
- Manard, B., et al. "Subacute Care in Hospitals: Synthesis of Findings from the 1987 Survey of Hospitals and Case Studies in Five States," prepared for the Prospective Payment Assessment Commission, August 1988.
- McFall, D. "Utah Providers Hurting from Unchecked Growth," Provider, December 1987, vol. 13, no. 12, 20-21.
- Meiners, M. "An Econometric Analysis of Major Determinants of Nursing Costs in the U.S.," Social Science Medicine, 1982, vol. 16, 887-898.
- New York City Office of the Comptroller. Cork in the Bottle: New York City's Nursing Home Shortage, December 1989.
- Nyman, J. "Analysis of Nursing Home Use and Bed Supply: Wisconsin, 1983," Health Services Research, October 1989, vol. 24, no. 4, 511-537.
- Rohrer, J. "Access to Nursing Home Care: A Need-Based Approach," Medical Care, August 1987, vol. 25, no. 8, 796-800.
- Scanlon, W. "A Theory of the Nursing Home Market," Inquiry, Spring 1980, vol. 17, 25-41.
- Sirrocco, A. "Nursing and Related Care Homes as Reported from the 1986 Inventory of Long Term Care Places," NCHS Advance Data, no. 147, January 22, 1988.
- Sirrocco, A. "Nursing Home and Board and Care Homes: Data from the 1991 National Health Provider Inventory," NCHS Advance Data, no 244, February 23, 1994.
- Swan, J. and Harrington, C. "Estimating Undersupply of Nursing Home Beds in States," Health Services Research, 1986, vol. 21, no. 1, 57-83.

BIBLIOGRAPHY

(continued)

- Tennessee Comptroller of the Treasury. Performance Audit: Health Facilities Commission, March 1990.
- Tennessee Health Facilities Commission. Health Care At the Crossroads: A Survey of Certificate of Need Programs in the United States as Compared to Tennessee, October 1990.
- U.S. General Accounting Office, "Nursing Homes: Admission Problems for Medicaid Recipients and Attempts to Solve Them," HRD-90-135, September 1990.
- U.S. Office of the Actuary. "HHS News Release," U.S. Department of Health and Human Services, October 2, 1991.
- Weissert, W., Cready, C., "Determinants of Hospital-to-Nursing Home Placement Delays: A Pilot Study," Health Services Research, December, 1988, vol. 23, no. 5, pp. 619-647.
- Weissert, W., Cready, C., and Pawelak, J. "The Past and Future of Home and Community-Based Long-Term Care," The Milbank Memorial Fund Quarterly, 1988, vol. 66, no. 2, 1-79.
- Weissert, W., Scanlon, W., Wan, T., Skinner, D., "Care for the Chronically Ill: Nursing Home Incentive Payment Experiment," Health Care Financing Review, Winter, 1983, vol. 5, no. 2, pp. 41-49.
- Weissert, W. "Estimating the Long-Term Care Population: Prevalence Rates and Selected Characteristics," Health Care Financing Review, Summer 1985, vol. 6, no. 4, 83-91.
- Weissert, W.G. & Musliner M.C. "Access, Quality, and Cost Consequences of Case-Mix Adjusted Reimbursement for Nursing Homes: A Critical Review of the Evidence." Report to the American Association of Retired Persons, Report #9109 (February 1992).
- Weissert, W.G. "Seven Reasons Why it is so Difficult to Make Community-Based Long-Term Care Cost-Effective." Health Services Research 20:4 (October 1985).
- Wildermuth, G. "Oregon's Adult Foster Care Program for the Elderly -- A Site Visit Report," Minnesota Department of Human Services, May 1990.
- Willemain, T. "A Model for Certification of Need for Long-term-care Beds," Health Services Research, Winter 1987, vol. 12, no. 4, 396-406.

CMS LIBRARY



3 8095 00012927 6

